Rock Products

THE INDUSTRY'S RECOGNIZED AUTHORITY

JANUARY 1958

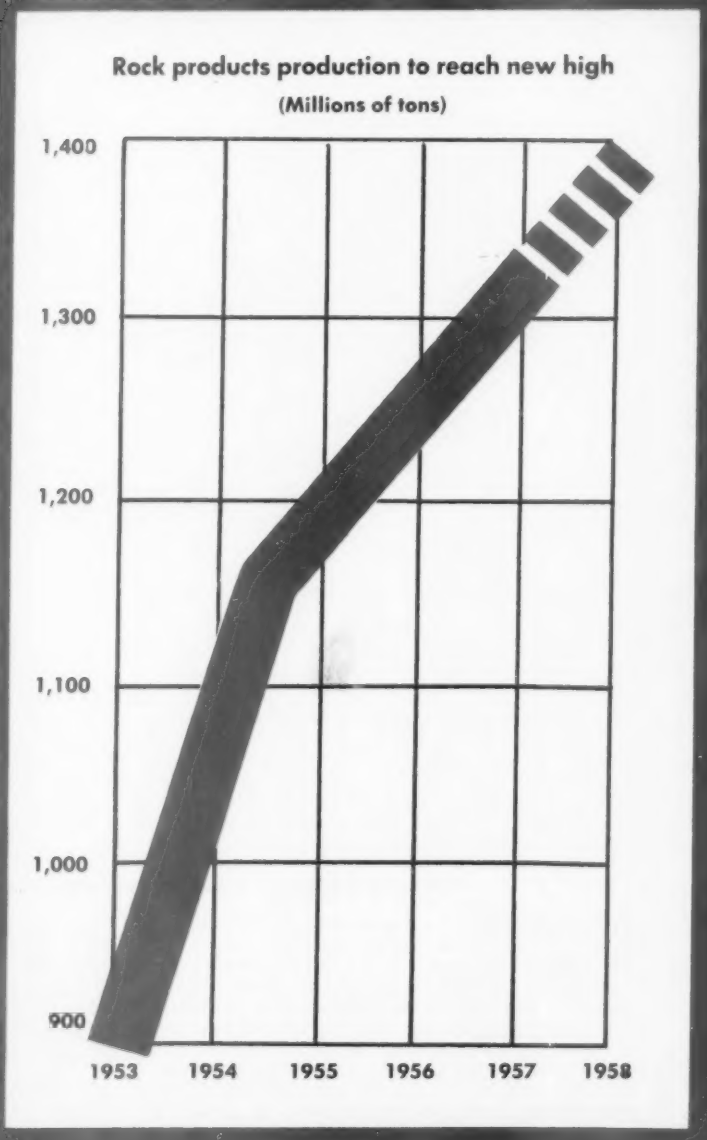
Forecast for '58:

Bright outlook for rock industries

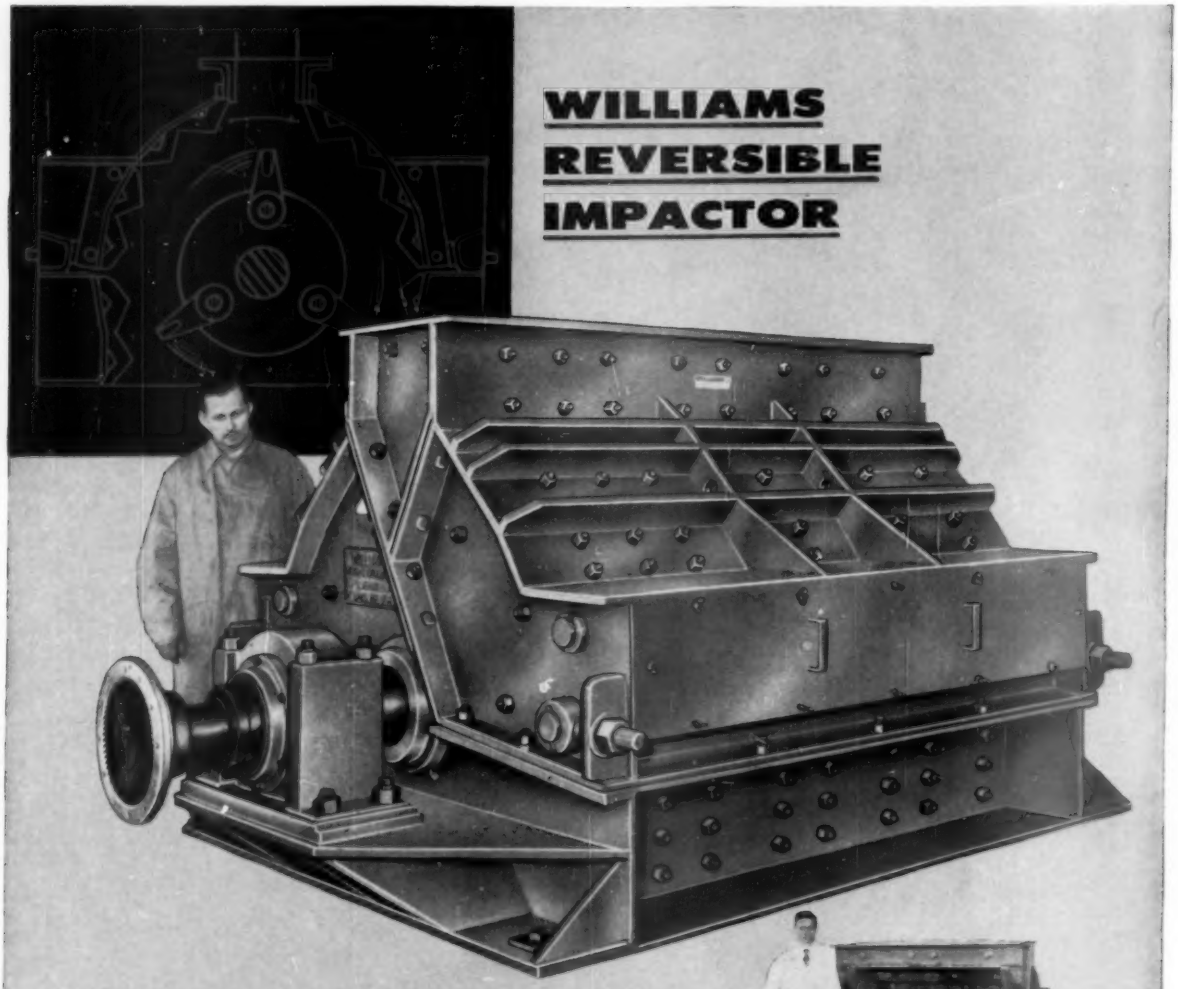
see page 78

The February shows

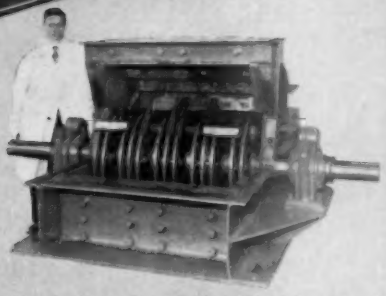
A complete preview of what you'll see and hear starts on page 98



WILLIAMS REVERSIBLE IMPACTOR



- 100% Impact Reduction
- No Friction Or Abrasion
- Unobstructed Discharge
- Less Upkeep Expense

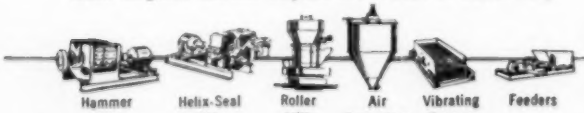


Internal view showing manganese steel impact blocks, hammers and liners. Rugged, heavy steel plate construction. Extra large shafts are mounted in oversize bearings sealed in self-aligning housings.

Unequalled For Secondary Grinding

Reduces limestone and material of similar hardness to 1½", ¾" or smaller. Properly adjusted, the Williams Impactor makes excellent material with the proper percentage of fines for road base course. Unusually low upkeep expense as reduction is 100% by impact. Material is fed to enter between the hammers and is thrown against the impact blocks setting up a repeated ricochet action which accomplishes the reduction. Adjustable impact blocks adjust for wear. A reversing switch on motor permits rotating hammers in either direction, to the left today and to the right tomorrow, thereby giving double hammer life. No grates are used. Entire bottom is open permitting unobstructed discharge of crushed material and less wear and tear. A size for every job. Let us tell you about one for your use.

WILLIAMS PATENT CRUSHER & PULVERIZER CO.
800 ST. LOUIS AVE. St. Louis 6, Mo.



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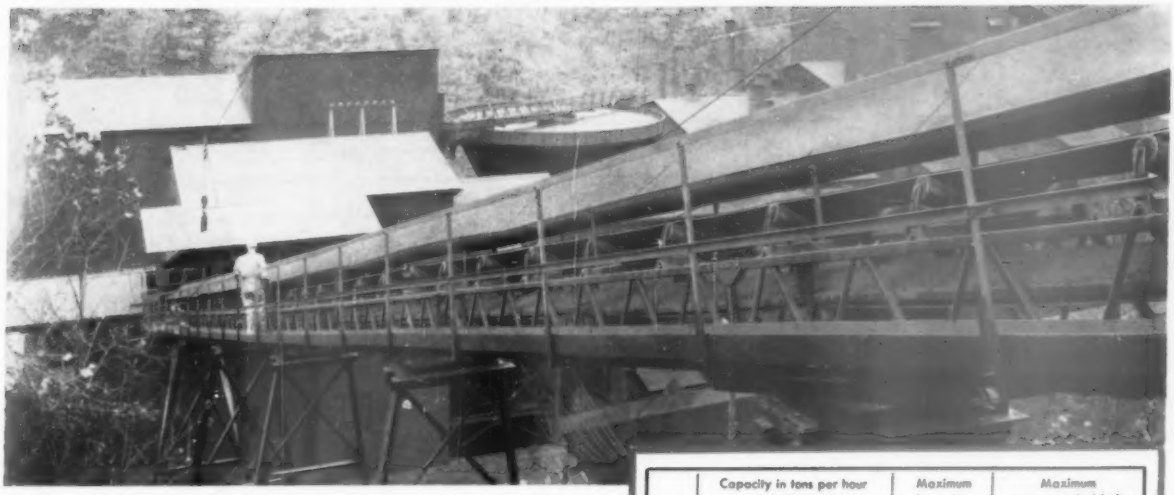
WILLIAMS
CRUSHERS GRINDERS SHREDDERS
Oldest and Largest Manufacturers of Hammer Mills in the World

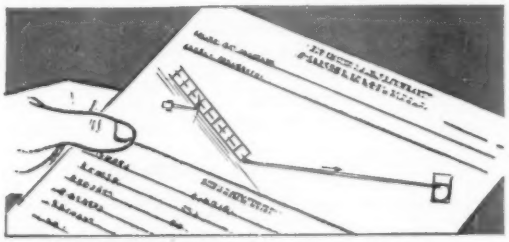


For lower costs down the line
make your belt conveyors

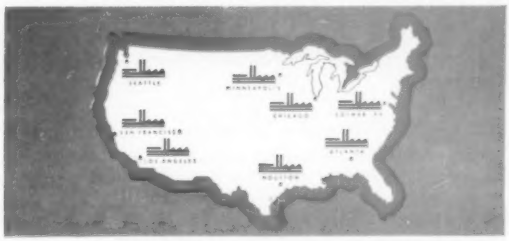
PRE-BILT by LINK-BELT

Belt width, inches	Capacity in tons per hour at belt speed of 100 FPM			Maximum lump size, inches		Maximum recommended belt speed, FPM	
	Weight of material, lbs. per cu.ft.			Sized	Unsized	Half maximum size lumps	Maximum size lumps
	50	75	100				
18	27	40.5	54	3	5	400	300
24	50	75.0	100	4½	8	500	400
30	81	121.5	162	7	10	600	450
36	117	176.0	235	8	14	650	500

EASY SELECTION. Your Link-Belt engineer will help you choose the best combination from a wide selection of PRE-BILT sectional belt conveyor components.



PROMPT ESTIMATES. From standardized data, an "on-the-site" quotation can be prepared covering the components for your needs.



SPEEDY DELIVERY. Standardized parts are shipped from the nearest of 8 plants. One-source availability eliminates the delay of co-ordinating purchases from several suppliers.

FAST INSTALLATION. Due to simple construction and shop-assembled components, you can do your own erecting. Link-Belt also furnishes complete erection service and supervision.

Link-Belt PRE-BILT sectional belt conveyors combine operating efficiency and economy to give you years of dependable, profitable operation.

For full information on these durable conveyors up to 36 in. wide—with drives up to 40 hp, 24 and 42-inch truss depths—contact your nearby Link-Belt office, or send for Book 2579.

LINK-BELT

BELT CONVEYORS

14,702

LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants and Sales Offices in All Principal Cities. Export Office, New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville (Sydney), N.S.W.; South Africa, Springs. Representatives Throughout the World.

SEE OUR EXHIBIT—SAND & GRAVEL, READY-MIX CONCRETE SHOW, CHICAGO—FEBRUARY 10-13

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JANUARY 1958

FEATURES

DEPARTMENTS

ROCK PRODUCTS is published monthly by MACLEAN-HUNTER Publishing Corporation, 79 W. Monroe St., Chicago 3, Illinois: P. D. Allen, President; Copyright, 1957, by Maclean-Hunter Publishing Corporation. Entered as second-class matter, Jan. 30, 1930, at the Chicago, Ill., post office under the act of Mar. 3, 1879. Additional entry at Long Prairie, Minn.

SUBSCRIPTION INFORMATION
Subscription Price: United States and Possessions, Canada one year, $3.00; two years, $4.00; three years, $5.00. U.S. single copies, fifty cents. Pan American, one year, $8.00; two years, $14.00; three years, $20.00. All other foreign one year, $12.00; two years, $22.00; three years, $30.00. One dollar for single copies. Canadian subscriptions and remittance may be sent in Canadian funds to ROCK PRODUCTS P.O. Box 100, Terminal "A," Toronto, Canada.

To Subscribers—Date on wrapper indicates issue with which your subscription expires . . . In writing to have address changed, give old as well as new address. ROCK PRODUCTS is indexed regularly by Engineering Index, Inc. and the Industrial Arts Index.

B.F.Goodrich V belt briefs—

TIPS ON THE CARE, MAINTENANCE AND SELECTION OF V BELTS FOR INDUSTRY

There's danger in replacing just one V belt at a time

When one or two belts in a set become worn or damaged, there's a big temptation to replace just the useless belts. Trouble is that the remaining belts have been stretched through use beyond their original length. The new, shorter belts have to carry most of the load. A severe shock or load strain will easily break these new belts. That's why it's always better to install a matched set of V belts rather than replace one belt at a time. Used belts can be put on a drive requiring a smaller number of belts.

This simple test can increase belt life 50% or more

Maintaining correct tension is one of the most important rules of V belt care. It will give belts at least 50% longer life—often doubles life.

Belts that are too loose will slip, causing both belt and sheave to wear out. If they sag too much, the snapping action caused when motor starts or when peak loads occur can actually break belts in two. ***To test tension,*** press down firmly on each belt. Belts that are properly tensioned will depress an amount equal to their own thickness for each 4 feet of center-to-center distance. For example, if the center-to-center distance is 8 feet, a D-section belt which is ¾ inch thick should depress twice its thickness—1½ inches.

What gives V belts their gripping power?

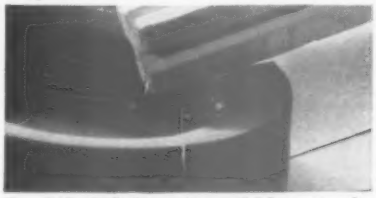
When a V belt fits properly into the sheave groove, it hugs the pulley side wall, produces its own grip. This high pressure contact is what gives the V belt its pulling power.

Here's why V belts made with straight sides give *extra* gripping power, transmit power better and more efficiently than other types of belts:

A V belt bends as it wraps around the sheave. The belt sides try to bulge, but the pulley side wall won't let them. As a result, the belt wedges itself tightly into the pulley groove.

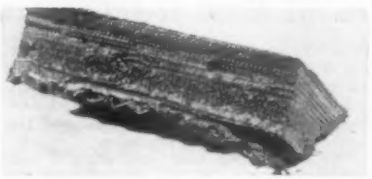
To get an idea of how this wedging action happens, try bending a V belt outside of the pulley (as shown in the pictures at right). The bulge you see represents the *force* of this gripping action because the rubber is actually compressed by the pulley walls. This force creates all the pulling power needed for efficient service, yet without any sacrifice of belt life.

Place ruler down side of belt as shown. Ruler lies flat.



Bend the V belt, as it would be around a sheave. Now place ruler down side of belt. It no longer lies flat.

What caused this V belt failure?



Appearance: Slip burn on belt.

Cause: Belt too loose; friction of belt against pulley groove burned rubber.

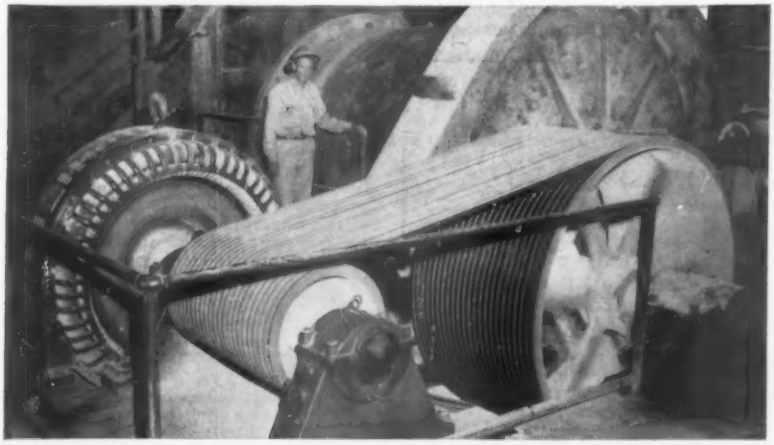
Prevention: Check tension as described in the first column. Inspect drive for overload and redesign if necessary.

Grommet eliminates cause of 4 out of 5 V belt failures

Unlike other V belts, all the load carrying cords in B.F. Goodrich Grommet V belts are concentrated in twin grommets. These grommets are cord loops made like giant twisted cables except that they're endless. There are no splices or overlaps in this cord—no weak spots to cause premature failure. Since the section where the cords overlap in ordinary V belts is where 80% of the failures occur, this cause for failure is eliminated in B. F. Goodrich Grommet belts. As a result, Grommet belts last 20 to 50% longer, depending on the service (the more severe the service, the greater the increase over ordinary belts).

Ask a factory-trained specialist

For help in selecting V belts for any kind of service, call the man who is a specialist in V belts—your B.F.Goodrich distributor. He can help you cut costs by getting longer life from your V belt drives. *B.F.Goodrich Industrial Products Company, Dept. M-249, Akron 18, Ohio.*



The strain of starting a heavy ball mill and keeping it turning was wearing out ordinary V belts before their time. Then Grommet V belts were tried. Because the B. F.Goodrich V belt is strong enough to pull heavy loads and take sudden jerks, the set shown lasted 6 years —longer than any other V belts used.

B.F.Goodrich

INDUSTRIAL PRODUCTS

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Sauerman News Briefs

SPECIAL EDITION OF SAUERMAN NEWS

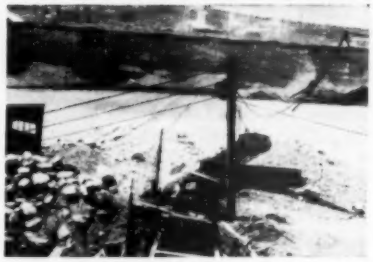
Brief items about the Sauerman Method... Crescent DragScrapers Slackline and Tautline Cableways... Durolite Blocks

Sauerman Bros., Inc. • 630 South 28th Avenue • Bellwood, Illinois, (Chicago Suburb)

4-YARD DRAGSCRAPER ELIMINATES A SHIFT AND UPS PRODUCTION

At the Union Sand and Gravel Co., a Sauerman DragScraper Machine gives Union the production necessary to supply increased plant demand in just one shift. Two shifts were required with their previous installation when a smaller Crescent and hoist were used.

The 4-yd. DragScraper delivers 175-cu. yds. or about 250 tph. when digging 400 ft. from the hopper. Power is supplied by a Sauerman three-drum hoist which has an inhaul speed of 500 fpm. with loaded bucket and a 1,000 fpm. backhaul speed. A 30-ft. tubular steel mast equipped with Durolite blocks forms the head end assembly. Operating cables from the hoist are reeved through the head end Durolites to the rapid-shifting tail bridle system 500 feet away.



A trolley and tail block travel the tail bridle cable. Lateral shifting of the trolley by the third drum changes the Crescent DragScraper's line of operation.

(Condensed from Sauerman News No. 144.)

How MAPCO Digs and Hauls at a Cost of 4 Cents per Ton

Mapco Sand and Gravel Co. is using a 2-yd. DragScraper to work their deposit at a cost of about 4 cents per ton. The company bases this figure on production of 235,000 tons and includes all labor, power, cable replacement and maintenance of hoist and blocks.

The DragScraper Machine is equipped with an electrically operated skid-mounted Sauerman hoist. Power is transmitted by V-belts. This new hoist replaced another Sauerman hoist that was in service for over 25 years.

The Crescent DragScraper works the pit and bank face and delivers to a ground level hopper on an average haul of 450 ft.

(Condensed from Sauerman News No. 148.)

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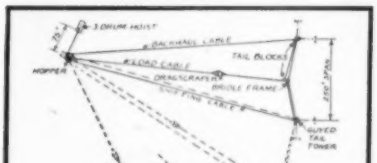
DragScraper Supplies Gravel for 82 Miles of Turnpike

More aggregate production was needed by Southern Michigan Materials, Inc. to supply structural and, upon completion, the maintenance and incidental needs for 82 consecutive miles of the Ohio and Indiana Turnpikes.

This demand was met with a new plant and a 5-yd. DragScraper which supplies gravel at the rate of about 275 tph. Digging goes to a depth of 75 to 80 ft. Power is provided by a Sauerman three-drum hoist driven by a 325-hp. diesel. The rapid-shifting bridle provides a means of changing the DragScraper's line of operation by placing the tail block attached to the bridle in another position along the 250-ft. span between the two steel tail towers.



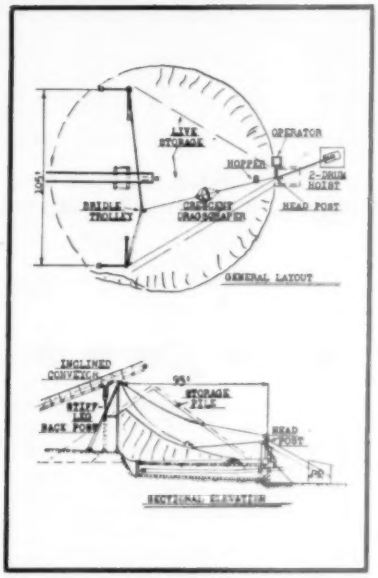
The hoist is pneumatically controlled by the operator from the hoist house. His location gives him excellent visibility of the entire pit and most of the plant.

The parent company, Northwest Materials, Inc., has completely excavated another pit nearby with a Sauerman 2-yd. Slackline Cableway. Northwest also uses a small scraper for stockpiling and reclaiming material from storage.

(Condensed from Sauerman News No. 145.)

(ADVERTISEMENT)

Rapid Shifting DragScraper is Engineered to Needs of Silica Sand Producer



The Sauerman Method was successfully applied to the requirements of a prominent silica sand producer, as shown in the drawing above. This Rapid-Shifting DragScraper Machine reclaims raw sand from a 6,000-ton stockpile.

The pile is formed by an inclined conveyor leading from the floor of the quarry to the live storage area. The Crescent DragScraper reclaims from storage to a hopper-fed conveyor in front of the head post.

Before the DragScraper was installed, the raw sand frequently bridged across the hopper. Such interruptions in the flow of raw sand to the plant resulted in costly shutdowns. The Crescent prevents this bridging action and provides a steady flow of material for processing.

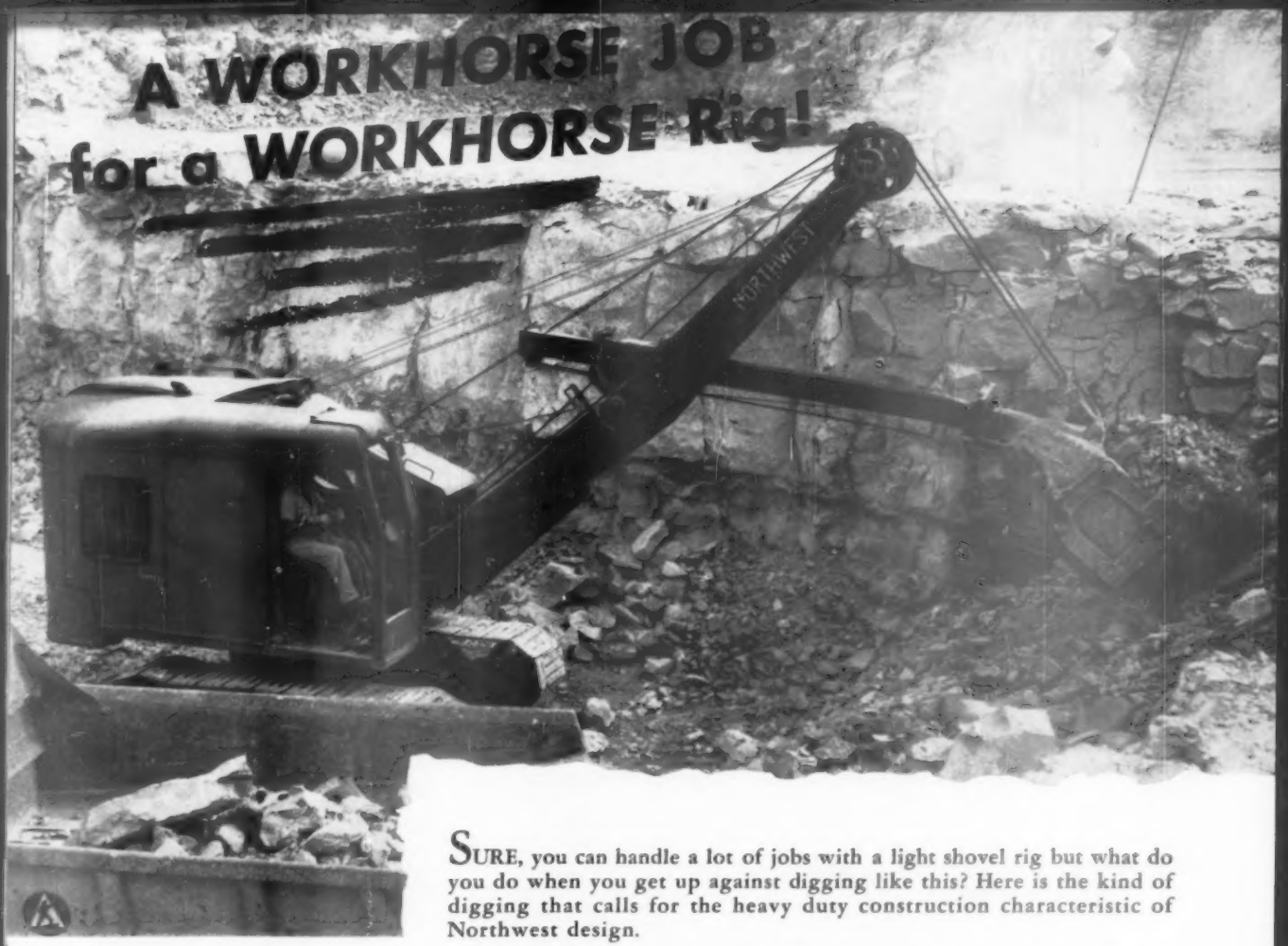
The Sauerman Method also permits the company to build up a reserve pile of raw sand sufficient for at least one week's production as insurance against a quarry shutdown.

(Condensed from Sauerman News No. 147.)

MORE NEWS AND INFORMATION

Issues of Sauerman News giving greater detail about the installations on this page are available on request. For full information, tell us your interest or requirements and ask for catalog. Contact Sauerman Bros., Inc., 630 S. 28th Ave., Bellwood, Ill.

A WORKHORSE JOB for a WORKHORSE Rig!



SURE, you can handle a lot of jobs with a light shovel rig but what do you do when you get up against digging like this? Here is the kind of digging that calls for the heavy duty construction characteristic of Northwest design.

This Model 25, ¾-yd. Northwest is in the quarries of the McMinville Stone Co., Inc., at McMinville, Tenn., and it's handling over 130 tons an hour. The Northwest Model 25 is the workhorse of the ¾-yd. field. It is a *real* Rock Shovel—a full ¾-yd. machine capable of handling jobs that lighter machines of the same rated capacity can't handle.

Your Northwest doesn't waste time! There's no stutter—no restarts—no dipper juggling either in the bank or getting the load to the truck. The cycle is fast and smooth. The "Feather-Touch" Clutch Control makes operation easy and gives the "feel of the load" without the use of delicate mechanism. Uniform Pressure Swing Clutches take hold smoothly without the jerks and grabs that slow down spotting the load. The Northwest Dual Independent Crowd utilizes force most independent crowd shovels waste and the Cushion Clutch eliminates shock overloads to parts under power.

It's a workhorse for workhorse jobs. Get full details before you buy.

Perhaps Rubber Tired Equipment will do your job better. The Northwest Truck Crane brings you a combination of advantages found in no other similar machine. Get the full story before you buy.

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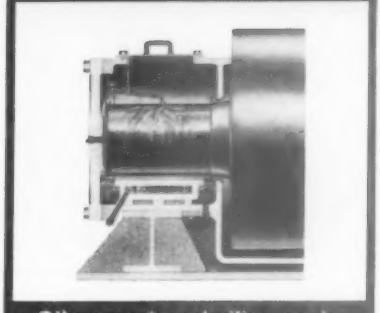
NORTHWEST EQUIPMENT IS BUILT IN THE FOLLOWING SIZES

SHOVELS	CRANES	DRAGLINES	PULLSHOVELS	TRUCK CRANES
¾ Yd. to 2½ Yd. Capacity	13-Ton to 50-Ton Capacity	¾ Yd. to 3 Yd. Capacity	¾ Yd. to 2½ Yd. Capacity	25-Ton to 35-Ton Capacity

Traylor-MADE ROTARY KILNS

Traylor Rotary Kiln installation in a chemical processing plant.

Standard roller support made with cast steel or forged steel rollers mounted on forged steel shafts.



Oil reservoir and oiling mechanism distributing oil over the shaft in a Traylor Single Support Roller Bearing.

Traylor engineers have built hundreds of rotary kilns which are now in use throughout the world. Put your thermo-processing machinery problems in the hands of experienced builders — a sure way to guarantee swift and efficient solutions. Write today for bulletin No. 1115.

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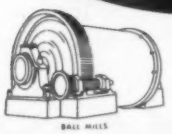
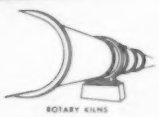


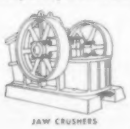
BALL MILLS



ROTARY KILNS

APRON FEEDERS

PRIMARY GYRATORY CRUSHERS



JAW CRUSHERS

SECONDARY GYRATORY CRUSHERS

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TEXACO LUBRICANTS SPEED

Aggregate production is tough on equipment. Dust, dirt and just plain axle-snapping work make the protection of engines, hydraulic circuits and exposed equipment critically important.

To help keep aggregate production on schedule and maintenance costs low—plant operators can protect these areas with three specialized Texaco lubricants:

Texaco Ursa Oil to lubricate engines . . . It keeps engines clean, prevents wear and rust, helps engine bearings withstand high heats and pressures.

Texaco Regal Oil R&O to improve hydraulic operation . . . It keeps systems clean, free of rust, sludge and foam. Assures efficient operation in any weather. *Texaco Crater X Fluid to fortify wire rope and open gears against destructive forces . . .* It keeps rope strong longer—lubricates and protects gears and

LUBRICATION IS A MAJOR

(PARTS, INVENTORY, PRODUCTION

AGGREGATE PRODUCTION

equipment exposed to year round weather.

These lubricants are part of the famous Texaco Simplified Lubrication Plan, which lets you handle *all* major lubrication with no more than six lubricants. Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States. Or write:

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FACTOR IN COST CONTROL

DOWNTIME, MAINTENANCE)

What's Happening

IN OTHER FIELDS OF INTEREST TO THE ROCK PRODUCTS INDUSTRY

January, 1958

A forward look at the year's construction activity has led **F. W. Dodge Corp.** to estimate a five percent increase in building contracts over last year. The 1958 total is expected to reach $33.83 billion. However, a portion of this dollar volume will be accounted for by higher construction costs rather than additional physical volume. Residential building contracts this year are expected to total $13.76 billion, up eight percent. The number of nonfarm dwelling unit starts has been estimated at 1,075,000, up six percent. Slightly above the 1957 level is the dollar estimate of $11.57 billion for nonresidential buildings, but the physical volume is likely to be down two percent. Heavy engineering construction contracts may reach $8.5 billion.

Increased activity has been noted in granting of leases and exploration permits for investigation and development of the McMurray oil sands deposit in northeastern Alberta, Canada. According to **The Financial Post**, a number of companies have specific development plans. Some of the activity appears to have followed the announcement of Royalite Oil to develop a section of the field, process and market oil via a pipeline to Edmonton 350 miles south. Its plan involves separation of oil and sand by centrifugal force, then coking and desulfurization on the spot. The sands are exposed on the banks of the Athabasca River for over 70 miles. They are said to contain from 100 to 300 billion barrels of oil, compared with estimated oil reserves of 150 billion barrels in the entire Middle East.

Automation in freight car weighing will result in speed-up in shipping time (7.4 percent) and add the equivalent of 25,000 more needed cars. This is the prediction of The International Railroads' Weighing Corp., developers of the new weighing system called railweight. Edward R. Marden of Aurora, Ill., designed the method which permits weighing of railroad freight cars without stopping, switching, or uncoupling them. The key to the system is a set of specially designed rails at the approach to a standard scale which eliminates the bind between car couplers.

Fusible silicone rubber, developed by Union Carbide Corp., is being used in production of tapes that do not stick to the touch but stick to themselves. A general insulating compound is available for fabricators, and another, which conducts electricity, is scheduled for early production. The tapes can be unsupported or supported by glass fibers or other synthetic fabrics or other rubber. Fusion occurs slowly at room temperature; application of heat or pressure greatly accelerates it. To provide a nonsticking surface, parts after fabrication may be dusted with mica or silica.

It was bound to happen in the atomic age. Laboratories now may avail themselves of a "decontamination service." Tracerlab, Inc., Waltham, Mass., promises safe cleanup of spilled isotopes by their squads of specialists. With their protective clothing and special equipment, they are prepared to rush anywhere in the country and decontaminate the accident scene.

WHAT'S HAPPENING

A milestone in production of electricity from nuclear energy was reached with the opening of the Santa Susana experimental generating plant of Southern California Edison Co. It uses heat produced by the Atomic Energy Commission's Sodium Reactor Experiment. The reactor is a sodium-cooled, graphite-moderated type, which uses uranium for fuel and liquid sodium to transport the heat to the steam generating facilities. Atomics International, a division of North American Aviation, Inc., built the reactor for the AEC. It generates 20,000 thermal kw., and the Edison plant converts it into 6,500 kw. of electricity. This is the first nonmilitary nuclear reactor to produce power for generating commercially distributed electricity. It is hoped that much will be learned from its operation which will be useful in planning full-scale nuclear power plants in years to come.

Advances in production techniques in forging of turbine blades for miniature jet engines has led Jack Wellings, vice president and general manager of Canadian Steel Improvement Ltd., to forecast new and wider applications for the engines. Encased in tubes a few inches in diameter and up to a foot or so in length, they are suggested by Mr. Wellings as highly portable large sources of power for mines, marine propulsion, power plants for light aircraft, in automobiles and freight-carrying vehicles. He pointed out another use—shattering rock in mining operations by "heat shock," a method that has shown itself to be extremely rapid.

Soil bank payments to farmers may be increased. The Department of Agriculture, reports **The Wall Street Journal,** may ask Congress to boost payments to $15 per acre from the present $9 average for land deposited in the long-term conservation program. This would draw 40 million acres into this phase of the program, double the present goal, and it would push the annual cost of the conservation reserve up from $58 million past $1 billion.

A patent for a process of reclaiming fine coke for use in sintering has been granted to Sinter Fuel Corp., which has steel companies and cinder block producers for its best customers. Fine particles of coke, found in banks of waste material discharged from beehive coke ovens, is graded and washed in five preparation plants operated by Sinter Fuel in southwestern Pennsylvania. Productive capacity is said to be 750,000 tons per year, and D. H. Stern, president, reports that the refuse piles will be a source of coke for 25 years.

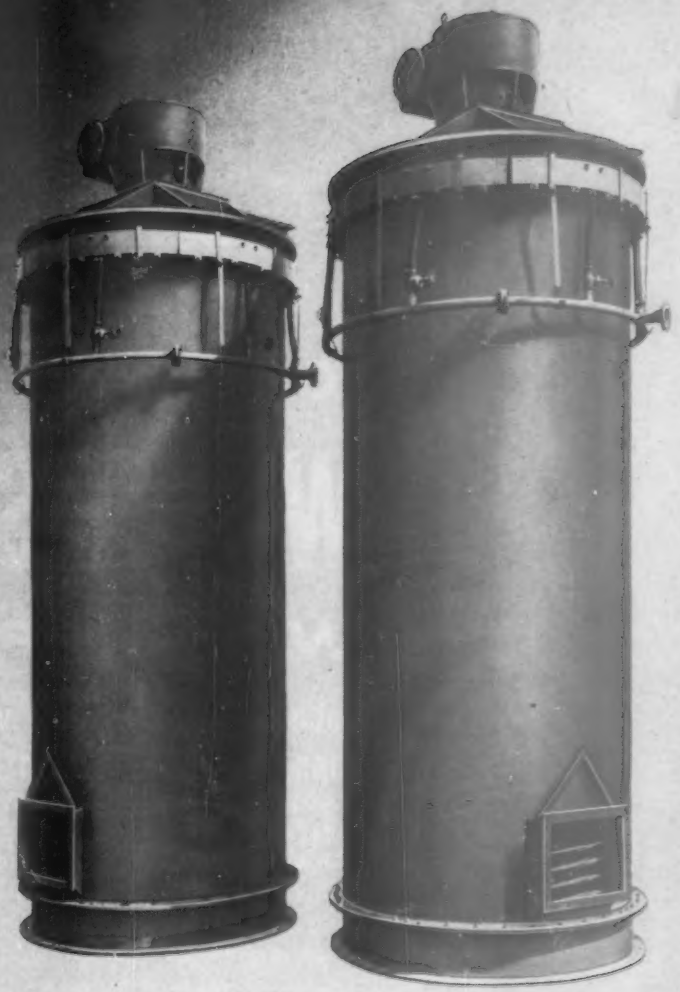
A speed record for material handling is claimed by Hewitt-Robins Inc. Its two-mile conveyor system at Little Valley, Utah, which is employed on the project of building a 13-mile roadbed across Great Salt Lake, is moving 30 million tons of gravel. Although it was designed to move the material at an average rate of 75,000 tpd., it averaged 83,333 tpd. during a recent 30-day period.

Described as a "permanent sample fair of the building industry" is a newly erected center on the grounds of the Palais Liechtenstein, Vienna, Austria. Its purpose is to provide a comprehensive survey of all modern building materials and processes, and to give the potential builder an opportunity to become acquainted with latest types of building materials and to choose among the newest construction methods.

The editors

SMIDTH

cement coolers



The Smidth Cement Cooler, developed especially for cooling hot cement to temperatures acceptable for bulk shipment or immediate bagging, is externally water-cooled. The hot cement is introduced at the base and conveyed in a thin layer along the cooled interior surface to the top, where it is discharged. High cooling efficiency is assured by the intimate contact of cement and the water-cooled surface.

The Smidth Cooler may also be used with many other similar dry pulverized materials.

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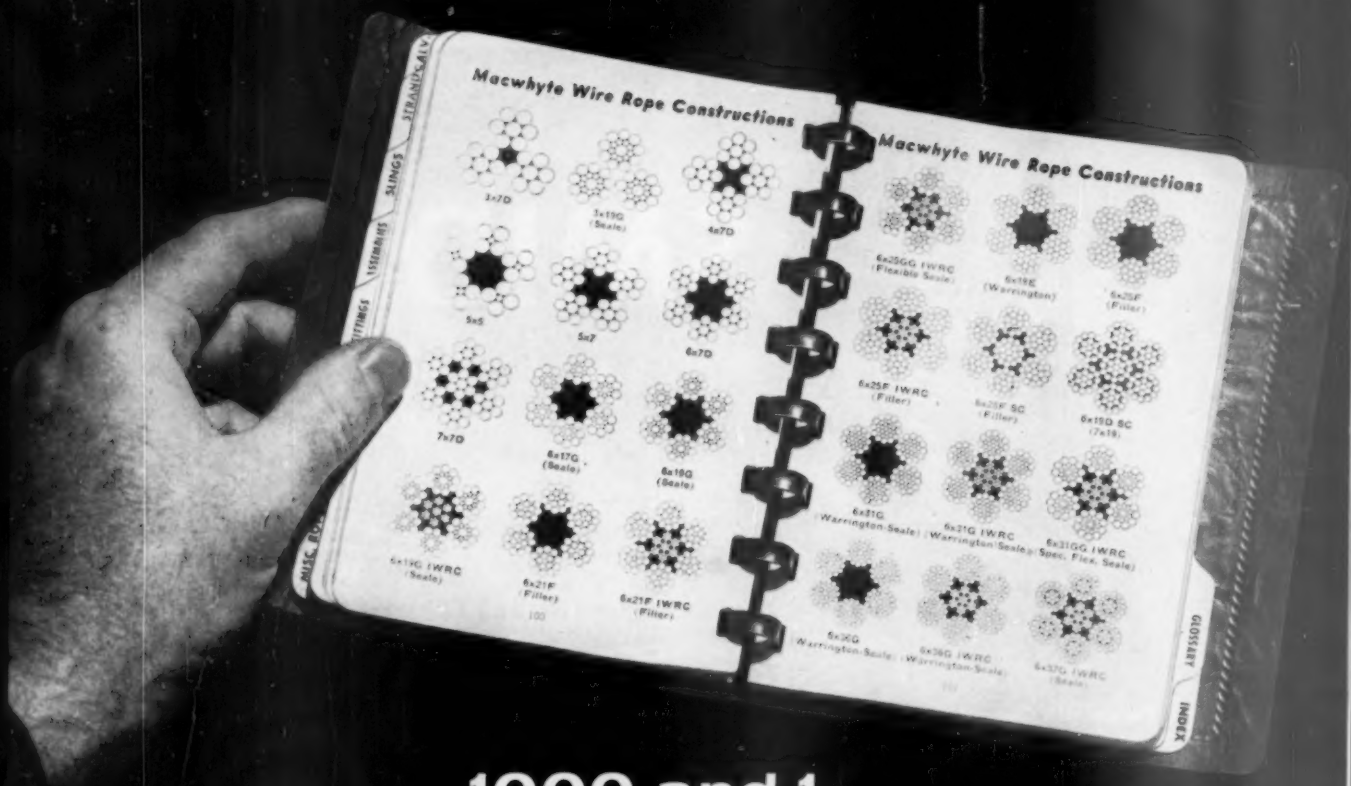

1000 and 1

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EDITOR'S PAGE

"Efficiency" is a big word this year –

But help in getting it is available

ANALYSIS OF REPORTS show that the rock products industry now has reached a point where a major accent in production has to be put on efficiency. That will be a big word in 1958.

You can expect competition to be pretty tough this year, even though production prospects are encouraging. The cost-price squeeze is expected to continue, but you may find it a little harder this year to come out on top profitwise than you did in 1957. You will, that is, unless you've planned to do something about it.

What to do? The answer is more simple to state than to effect, but output in units of production per unit of labor must be increased in 1958 to withstand the tightening cost pressure. More simply stated, it's going to be harder for you to make a "buck" this year unless you jack up productivity rates.

This is nothing to really fret about too much for at least two reasons: (1) it's been expected—the handwriting's been on the wall for some little time; (2) facilities and methods are available to help you improve production efficiency and product quality at the same time. With respect to the latter, you're in luck this year!

Two big conventions and shows for the aggregates industry will be held in Chicago during February. They're made to order to help you solve your individual production problems—and others, too. And it is much more than mere coincidence that this help comes right at a time to be of maximum benefit to you. The industries, associations and equipment makers have planned it that way.

We urge you to attend these "must" meetings next month. You'll find a complete preview of what is in store for you at these meetings elsewhere in this issue. Look it over, then buy your ticket to Chicago. You'll be glad you did, we're sure.

George C. Lindsay

TELSMITH

42" x 48" JAW CRUSHER

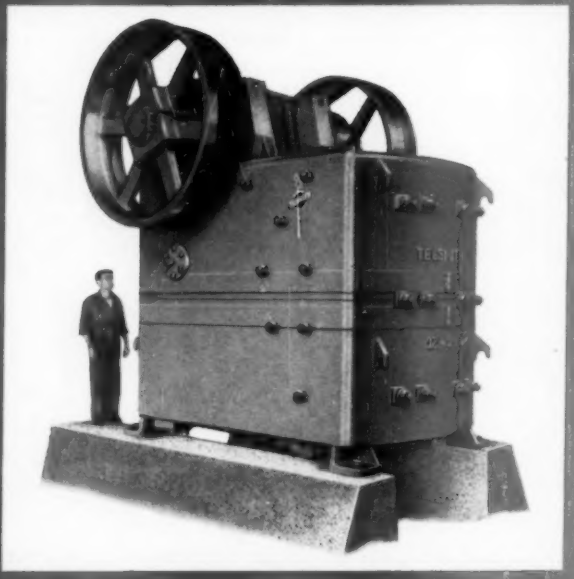
with welded steel frame

GREATER CAPACITY! Who says so? Large aggregate producers who have owned and used other good makes of jaw crushers! That's *how* they *know* that this Telsmith 42 x 48 gives 'em more production, right along. It's Telsmith design—based on long years' experience—design that correctly locates pitman shaft and toggle in relation to crushing chamber; then combines this with the stroke and speed that's exactly right.

THE BEST FRAME EVER BUILT — a double-wall, box-section, continuous-welded, accurately machined, stress-relieved, two-piece, all-steel main frame.

ALL PROVEN FEATURES — Annealed cast steel pitman; large diameter eccentric shaft; cylindrical type heavy-duty roller bearings; reversible jaw dies; and hydraulic adjustment of discharge opening. For reliable, profitable production—you can't buy a better jaw crusher.

BULLETIN 280 gives complete specifications—send for it.

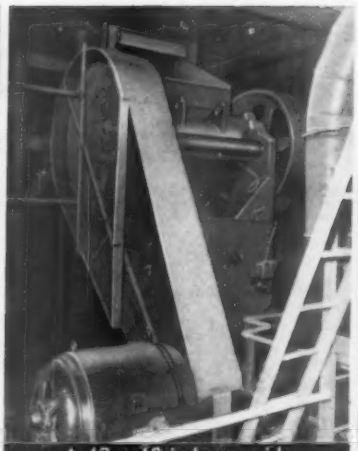


J-2

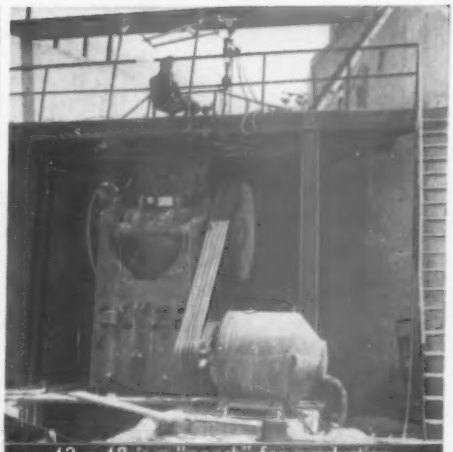
Producing aggregate for St. Lawrence Seaway with 42 x 48

Mounted 42 x 48 for road construction in Oregon

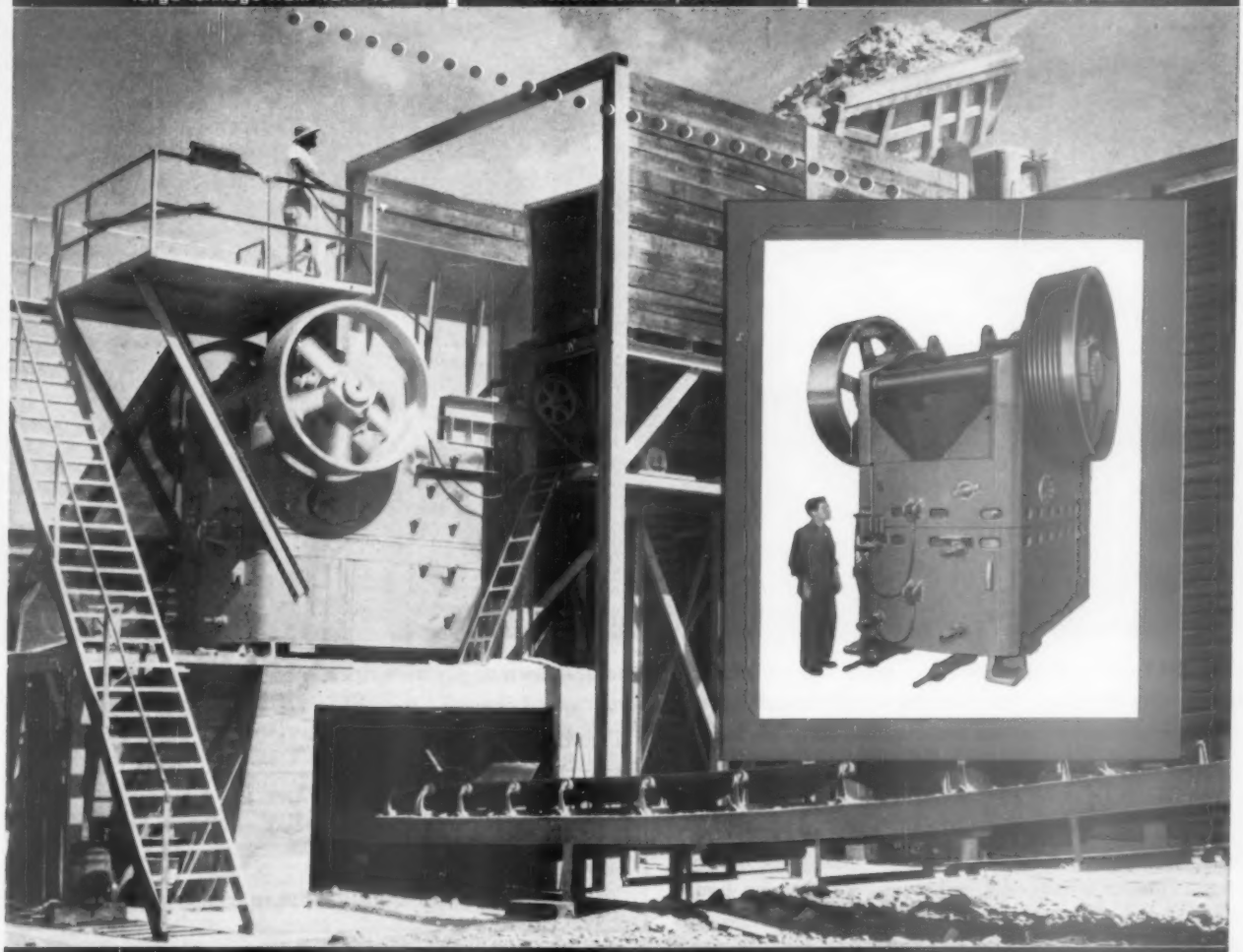
Alabama crushing plant gets large tonnage from 42 x 48



A 42 x 48 in large mid-western cement plant



42 x 48 is a "peach" for production in Georgia quarry plant



In this North Carolina quarry plant 42 x 48 Jaw again proves its big capacity

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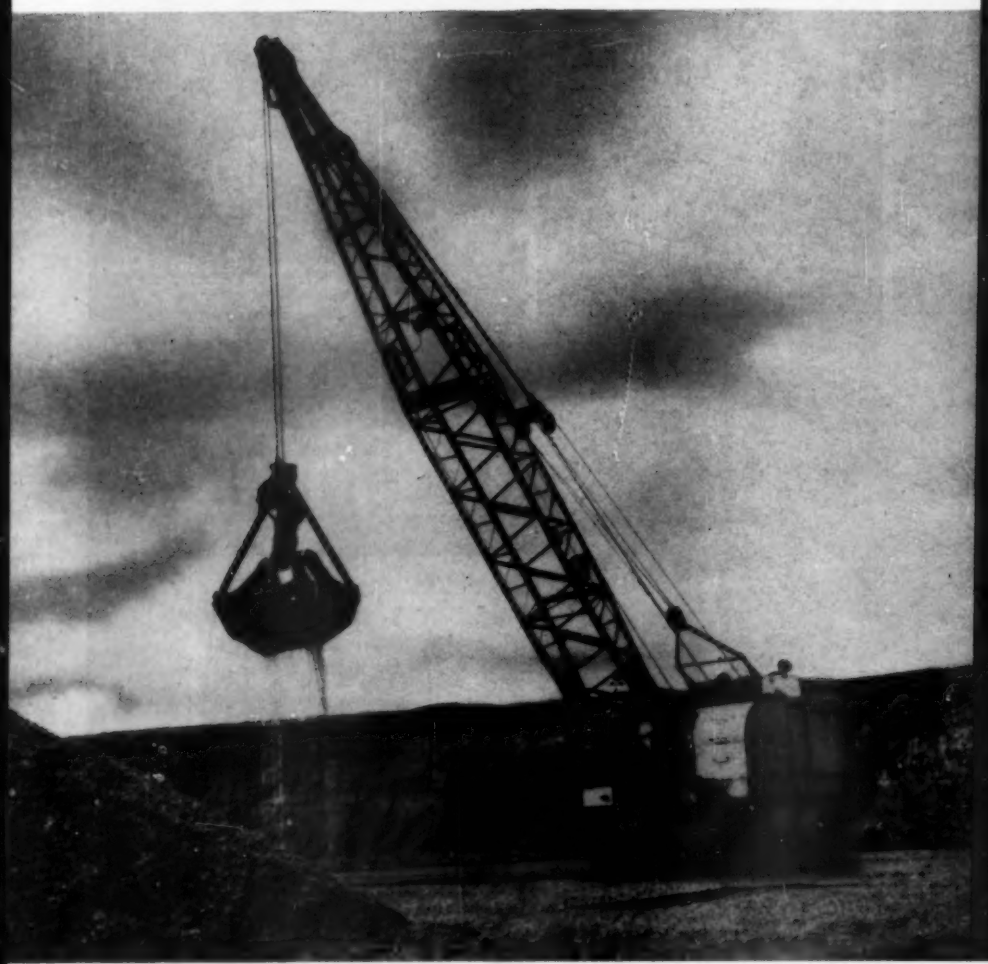

Famous orton *power is not in durability alone*

ORTON cranes have long been famous for durability; ORTON steam cranes are still in use; ORTON users are reluctant to part with rugged, easy-to-maintain ORTON work horses.

But this is not the most important ingredient you buy with an ORTON. You get the benefit of more than 50 years experience, *applied*—TO—*YOUR*—CRANE!

EXPERIENCE means a great deal . . . especially at ORTON where "production-line" manufacture is maintained only so long as the cranes on the line are engineered to the latest, *proved* design for *your* job. For, since Orton can't build *all* the cranes, it builds only the best.

ORTON, *first* with *Torque-Control*, *first* with air-operated controls, *first* to apply new techniques *which have been proved*, is also the *first* to recognize that *each handling job is unique*, thus, an ORTON crane is built for *you*—*your* job—*your* specification.

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. . . ALL motion entirely independent.
. . . NO jaw clutches—not even in travel mechanism.

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ROCKY'S NOTES

NATHAN C. ROCKWOOD

Long-range view of rock products economy

AT THIS TIME OF YEAR there are prophets galore on the prospects for the months immediately ahead. For publication, for their stockholders, customers and the general public, most big business and industrial executives are optimistic. In private they may have serious doubts. On one thing probably every citizen with any claim to intelligence can agree, that is, this current inflation cannot go on indefinitely without a day of reckoning—unless every element in the economy can share more or less equally in this inflation—obtain more dollars to make up for their constantly lessening purchasing power.

That never seems possible, and the most conspicuous factor to be read between the lines in the present economic outlook is general recognition that some elements in our economy are falling behind in the race to get their share. How sensitive industry is to continued federal government expenditures for defense is amply and recently illustrated by rise and fall of stock market quotations and unemployment statistics. Most big business executives publicly complain against vast expenditures of the federal government, yet in private they must admit that it has become quite necessary to many of them to maintain full employment, or the prosperity they are accustomed to.

If defense expenditures have become so necessary, and the national budget must be kept within expected income, where shall cuts be made? Everyone has his own ideas on that, so long as such cuts do not affect his own business. Yet we all know from experience that the first and most drastic cuts are almost invariably made in new construction projects, where cuts are often justifiably indicated by private business judgment, or national, state and local policy. New construction can nearly always be postponed, that is, we can continue to exist, but apparently not without defense and, with the tremendous present increases in construction costs, between the time the money is appropriated and the time contracts are let, there is considerable logical reason for postponing contemplated new construction, if a fall in costs is indicated by delay. Our older readers will remember that is exactly what happened in the middle 1920's, after the collapse of the first World War boom. With rapidly rising costs of labor and materials, in spite of a large projected highway program, many public officials refused to let contracts. Prices did come down, and the fight to get available business with rapidly expanded production facilities resulted in what was then termed "profitless prosperity."

We will not be popular for suggesting this may happen again, but all of us would be silly not to recognize that it can happen. Hence, we need a long-range view of our rock products industry economy from time to time to keep our feet on the ground. Probably no worthwhile operation, or expansion of an operation in these industries, in the past decade has proceeded without some kind of a prospective market survey. This is no more than applied elementary economics. Such surveys in the construction industry are not especially difficult, since statistics of building permits, sale of bond issues, advertisements for bids, awards of contracts, etc., are readily accessible. These can be analyzed for percentages of the various building materials to be required, and predictions for necessary production facilities may be made several years in advance with considerable accuracy.

During periods when money and credit are cheap, and additional costs, or at least part of them, can be passed on to the customer, it is not difficult to obtain all the new capital required for producing projects and expansion of older ones, at low cost which is reflected later in lower production costs. The most important factor in the changing economy at present is that this condition

Please turn to page 174

Likes the first YAUN . . . *buys 5 more!*

"Out-wears other buckets we've used 2 to 1," says Edwin Hoffman, Battle Creek, Mich.

"Seven years ago we bought our first Yaun. It handled hundreds of thousands of yards of material ranging from sandy, abrasive soil to stiff clay. Couldn't seem to wear it out, and it is still usable. Since then we've bought 5 more. We find them conservatively rated—they actually hold more than the advertised capacity. The essential wearing parts—chains, shackles, linkage, out-last other buckets we've tried by 2 to 1!" So reports Edwin Hoffman, partner, Hoffman Bros., Battle Creek, Mich., earthmoving contractors.

All muscle—no fat—that's the Yaun bucket! Yauns are all-welded for maximum strength, minimum dead weight.

They're built stronger with heavier castings—and wear longer because of manganese steel wearing parts and hard-faced lip surfaces. They dig and dump fast and clean because of their perfect balance.

Sold by leading construction equipment distributors everywhere.

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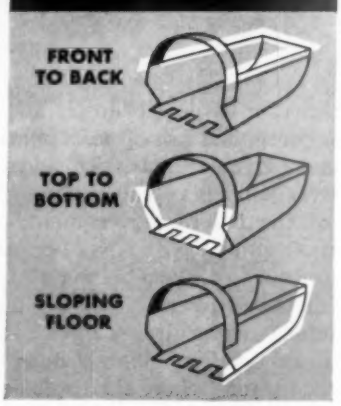
TAPERED 3 WAYS
for faster digging, cleaner dumping



YAUN

DRAGLINE BUCKETS (⅜ to 40 cu. yd.)

CLAMSHELL BUCKETS (¼ to 3 cu. yd.)

CONCRETE BUCKETS (½ to 2 cu. yd.)

THE BUCKET THAT'S BUILT TO LAST!

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Washington Letter

Edgar Poe

A Look Ahead With the beginning of the New Year, the general feeling in the Nation's Capital is that 1958 will be another good year economically. Personal incomes are expected to offset any gains in the cost of living. The big economic story of the past two years is the fact that the population of this nation is increasing 8,000 a day. A new baby being born every 11 seconds is going to need not only the necessary essentials of food and clothing, but also more automobiles, more and better highways, schools and churches in the future.

Expense Accounts Taxpayers in the spring need not itemize the amounts received on expense accounts. However, it would be a good idea, the Internal Revenue Service said, for all people receiving expense money to start keeping an accurate account of all such expense items for the future. The Joint Congressional Committee on Internal Revenue Taxation probably will make a clarifying declaration during this session of Congress on the heels of the recent wide publicity given to expense accounts.

Requirements calling for a complete accounting of all expense accounts was passed in 1921. However, millions of employes with relatively small expenses have paid little or no attention to it.

Highways Important To defense After a series of hearings, Representative George H. Fallon, chairman of the House Roads Subcommittee, said that the stepped up requirements for national security emphasized the defense importance of key highways. He said construction tempo should be stepped up. The Maryland Democrat said he is recommending to Congress that Federal-aid funds for primary and secondary roads be increased by a total of $25,000,000 a year. This amount would increase Federal funds from $875,000,000 provided for 1959 to $900,000,000 in 1960 and $925,000,000 in 1961.

"I hope to see this rate of progress adopted and continued in future years to the point where Federal-aid funds will reach a level of $1 billion a year at the minimum. On a Federal-State 50-50 matching basis this would of course produce a $2 billion annual program for these roads."

Both Senator Albert Gore, Democrat of Tennessee, chairman of the Senate Public Works Subcommittee of Roads, and Representative Fallon plan to hold hearings in connection with roads legislation early in the session of Congress.

Forecasting Highway Needs The Bureau of Public Roads devoted considerable research the past year to future highway needs in this country. Involved in the studies were different classes of motor vehicles, traffic volume and weight composition, and data about user and nonuser benefits. Commissioner C. D. Curtiss said the best progress was made in dealing with the classification of vehicles and their corresponding road-user tax payments.

Congress may be able to blueprint an equitable solution of the Federal highway tax problem from the broad study.

Exodus of city dwellers to the suburbs was also a part of the study. The single home subdivisions, plus some apartment developments a few miles from the central city, have placed an enormous burden on existing streets and highways.

Travel patterns and habits of urban residents are being studied so that the highways and streets of the future may be mapped. The mass production of homes in the outlying areas has created some complex problems. The growing population means that the problems will continue.

One of the Bureau's most lucrative sources of information is resulting from home interviews. Through these interviews researchers are learning why and how often the suburban motorist makes his trips. It is an understatement that the automobile has and will in the future change the

pattern of living for a great percentage of the Nation's population.

"Forecasting highway needs involves an estimation of future population trends, population density, types of housing, automobile ownership and vehicle use," said William L. Mertz, highway transport research engineer for the Bureau. "The planner must resort to estimates of future growth of urban areas based on some philosophy of expected changes in land use. If reasonably accurate land-use forecasts can be obtained, and the traffic that will be generated by these changes can be estimated, the planning engineer is then in a position to apply the data developed by the home interview type of traffic study to future trends."

Soft spots In industry

There are a number of soft industrial spots in scattered sections of the country. This has been particularly true relative to the steel and automotive industries and some farm and road equipment manufacturers. Some of these industries over-expanded in 1956 and early 1957, a Labor Department spokesman said.

Construction Outlays

The Department of Labor forecasts that the outlays for new construction in 1958 are expected to total $49.6 billion or five percent more than the record 1957 total of $47.2 billion. The Department predicts that the $2.4 billion increase will be mostly in residential building, both public and private, and in highway construction.

Expenditures for almost all other major types of construction may record a moderate rise or remain at about the 1957 level. There will be a marked decline for private industrial plants and military facilities.

Supply of mortgage funds will continue to be the limiting factor in housing activity in 1958. The department predicts that about 1,100,000 new nonfarm dwelling units will be started in 1958, about 1,050,000 will be privately financed. Outlays for public housing will probably climb to a record of $850,000,000.

Hospital construction will continue to show substantial growth in 1958 to almost $600,000,000, despite the more than 50 percent increase rolled up in 1957. Federal aid funds have provided considerable stimulation in this field. Outlays for stores, restaurants and garages will stabilize at slightly above the 1957 levels.

The expected $1 billion increase in public construction to $14.9 billion will result from state and local projects, with about 60 percent resulting from the Interstate Highway program. Prospects are that total outlays for public highways, streets and roads will rise sharply, about 14 percent, to $5.5 billion.

Approximately nine-tenths of the gain will occur on the 41,000-mile Interstate System. Expenditures (90 percent federal and 10 percent state) will expand from about $250,000,000 in 1957 to $850,000,000 in 1958. Other highway programs are expected to show expenditure gains in 1958 on the basic and continuing Federal-aid highway 50-50 matching programs.

Outlays for roads financed solely by the states, including toll roads, will continue the downtrend which began in 1957 because so much of the state funds are being devoted to the Interstate System. Work has now been started on more than 2,250 miles of the superhighways.

The farm-to-market roads construction program in 1958, which reached about $1.7 billion in 1957, is expected to rise to more than $1.8 billion in 1958. The various construction figures cited do not include the series of preliminary costs such as engineering, and the cost of rights-of-way, which has been soaring.

Labor Trends

The Labor Department says laborers are being supplanted in the construction industry by various kinds of machinery. Consequently, some jobs formerly performed by the unskilled now require semi-skilled or skilled workers. Emphasis in the future will be upon skill because of increased use of automatic machinery.

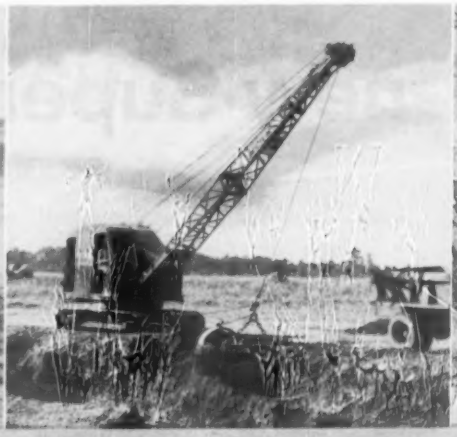
Today white collar workers are more numerous than blue collar workers in the labor force. This trend toward white collar employment is expected to continue. By 1965 an additional 10,000,000 people will be needed in the labor force as compared with 1955. The population of the United States is expected to increase by about 25,000,000 between 1955 and 1965. This is equivalent to adding a new state each year the size of Maryland for the next decade.

Meantime, there are more than 172,000,000 people in this country to feed and clothe. The new year of 1958 is regarded both in trade and government circles to appear favorable for the housing industry. There will be a renewed attack on "city blight" which is considered the foremost economic problem of the central cities. Congress is likely to strengthen its public housing legislation to stimulate attacks on the slum problems.

END

These Sand and Gravel Jobs Profited from Bucyrus-Eries... Yours Can Too!

This 1½-yd. 38-B shovel loaded blasted caliche to trucks which supplied a temporary gravel plant.



"We own four 15-B draglines and consider them the very best buy on the market," says the owner of this machine loading gravel for road maintenance in Alabama.

Powerful and sturdily built, this ¾-yd. 22-B offers dependable day-to-day service. It loads blue and rose sand at its owner's pit near Mexico City, Mexico.

This 4-yd. 88-B dragline strips overburden covering gravel deposits. "Our 88-B," says the owner, "is doing a very good job . . . just what we needed for this location."

This 3-yd. 71-B loaded sand and gravel for highway use in New York state. A Bucyrus-Erie 51-B was at work for the same company at a different location.

This 2½-yd. 54-B is one of two Bucyrus-Erie draglines excavating river-floor overburden and pit run gravel to supply a Texas sand and gravel plant.

Put a Bucyrus-Erie on your sand and gravel operations and get the same outstanding performance that is making money for pit owners from coast to coast.

Bucyrus-Erie offers a complete line of convertible machines from ⅜ to 4 cubic yards. Whatever the size, you get dependable on-the-job performance because Bucyrus-Erie designs and builds for quality every step of the way.

Why not join the growing list of owners who have profited from Bucyrus-Erie draglines and shovels? For all the facts on these dependable high-output machines, see your local Bucyrus-Erie distributor soon. 325E57C

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FORD makes the

3 all-new Super Duty V-8's

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- Gross torque up to 490 lbs-ft
- Modern Short Stroke design
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- Machined combustion chambers
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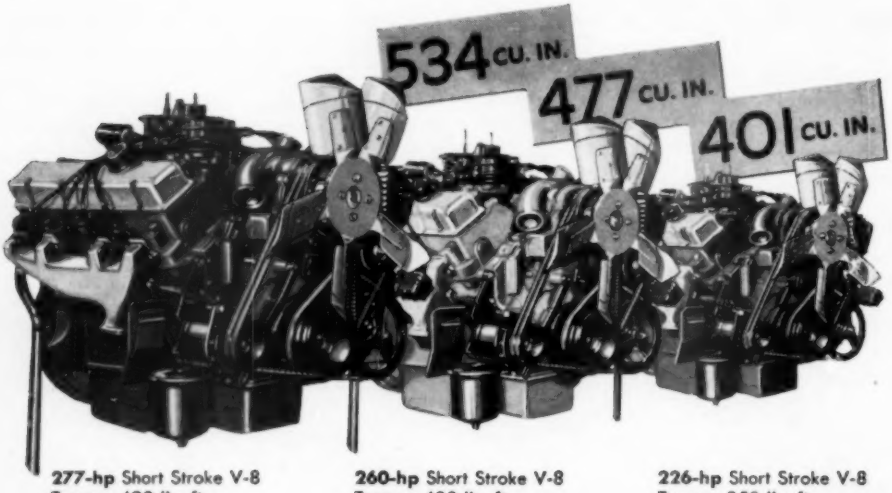

277-hp Short Stroke V-8
Torque: 490 lbs-ft
@ 1800-2300 rpm

260-hp Short Stroke V-8
Torque: 430 lbs-ft
@ 1800-2300 rpm

226-hp Short Stroke V-8
Torque: 350 lbs-ft
@ 1800-2300 rpm

10 all-new Extra Heavy Duty Series

GVW's up to 51,000 lb. For '58, ten new basic series are added to Ford's already extensive Heavy and Extra Heavy Duty line. Four new Tilt Cabs, four new Conventionals, and two new Tandem models offer GVW ratings up to 51,000 lb.

GCW's up to 75,000 lb. New T-950 Tandem is rated for 75,000-lb. GCW. Biggest single-rear-axle models are rated for 65,000-lb. GCW.

Front axle capacities up to 15,000 lb. Choice of three front axles in most new Ford Extra Heavies. Rated capacities of 9,000 lb., 11,000 lb. and 15,000 lb.

Rear axle capacities up to 29,000 lb. Wide choice of rear axles includes single-speed and two-speed, single reduction and double reduction types. Capacities range from 18,000 lb. to 29,000 lb.

Bogie axle capacities up to 38,000 lb. For '58 there are two new Extra Heavy Duty Tandem Axle models. The new T-950 Series features a tandem rear axle assembly rated for 38,000 lb. New T-850 Series offers choice of 28,000- or 34,000-lb. bogies.

New highway transmissions. Roadranger transmission is available in all ten new Ford Heavies and Extra Heavies. Up to 33% less shifting. "Short Fourth" highway transmissions also available on "F" and "C" Series. With these new transmissions, engines operate in peak horsepower range with greater fuel economy.

big move for '58

–up to 534 cu. in.

New Series T-950 Tandem model is biggest capacity Ford truck ever built! Rated up to 51,000-lb. GVW—75,000-lb. GCW. New 534-cu. in. Super Duty V-8 provides exceptional horsepower and torque with rugged durability.

FORD TRUCKS COST LESS

LESS TO OWN . . . LESS TO RUN . . . LAST LONGER, TOO!

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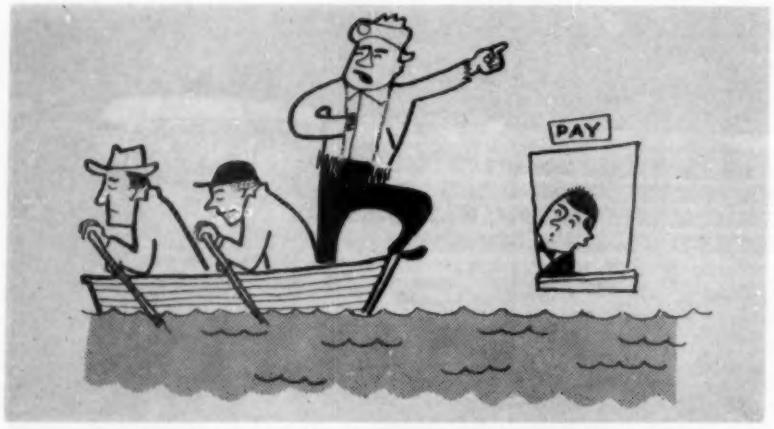
How would you decide?

A roundup of actual day-to-day in-plant problems and how they were handled by management men



Is "reporting-pay" required if "act of God" keeps men from working?

What Happened:

THE COMPANY'S POLICY was to pay for four hours' work to any employe who reported at his regular starting time and was sent home due to lack of work. However, the company had always followed the practice of not paying when the lack of work was not its fault but due to an "act of God." A flood caused rising waters to enter the plant during the night, but they had receded enough by the next morning so that most departments were able to go to work at the regular time, 7:00 a.m. Some 40 workers, in the department most hard hit, were not put to work immediately, but they were told to hang around since there would be either production or clean-up work. At about 7:50 a.m., management changed its mind and told the employes to go home. The workers claimed four hours' pay. They argued:

1. It was an "act of God" that caused the lack of work, but the employes should have been sent home immediately.
2. They had actually been put to work when they were told to remain at their work stations at reporting time.

The company replied:

1. We never have paid for lack of work due to an "act of God" and this was certainly what happened.
2. We needed the 50 min. to determine whether it was possible to put these employes to work.

Were the workers:
Right? ☐ Wrong? ☐

What Arbitrator Carmichael ruled:

"Normally an employer is relieved of the obligation to pay "reporting pay" when the lack of work is due to an act beyond his control. The employer is required, however, to make a reasonable effort to notify the employes not to report. When prior notice, so that the employes do not have to leave their homes and travel to the plant, is not possible, the employer has an obligation to make a quick decision to avoid his "reporting pay" obligation. The employes did not, as they claimed, become entitled to the four hours' pay immediately upon being notified to stand-by. But to be held on a stand-by basis for nearly an hour was patently unreasonable. These employes shall be paid for four hours on the day in issue."

Is granting leave of absence mandatory?

What Happened:

THE COMPANY RULE regarding leave of absence reads as follows:

"Leaves of absence exceeding two weeks shall not be granted. These leaves must be requested on a form provided by the personnel office."

Charles Quarrez went to the personnel office and got the required form. He filled it out and indicated that he wanted a 10-day leave to attend his cousin's wedding in a distant city. The following day he was told by his foreman that his request for leave was turned down because he couldn't be spared at this time, while certain "rush" orders were backed up.

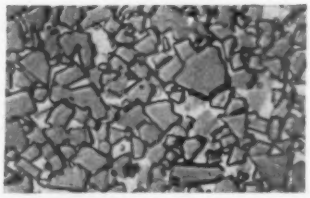
Quarrez felt that the company was quite unfair in denying him the leave, and that it had no right to do so. He claimed that the rule only said that the leave could not exceed two weeks, and had to be requested on a special form. He had complied with the rules.

The foreman replied that the company had to be the judge of when a

(Continued on page 31)

Each incident given in this department is taken from a true-life grievance which went to arbitration. Names of some principals involved have been changed for obvious reasons. Readers who want the source of any of these cases may write to Rock Products.

Longer bit life— with *new* Sandvik Coromant Bits



Sandvik Coromant Tungsten Carbide (Microphoto) Uniformity of size, even distribution of grain are marked. Free from porosity and impurities —therefore stronger, longer-lived.

Low quality Tungsten Carbide (Microphoto) Black marks are contaminations caused by deficient production control. They weaken the carbide, reduce its working life.

NEXT time you buy bits, specify Sandvik Coromant because they give more footage per bit, lower drilling costs. Here's why:

1 Only first-quality tungsten carbide is used —as shown in the microphotos above. This means less wear, longer life and a better job.

2 The bodies are precision-made of high quality alloy steel—tough enough to take the strain throughout the extra-long bit life.

3 The bigger Sandvik Coromant bits are all of X-design, which prevents rifling. No wonder Sandvik Coromant inserts are the most widely used in the world, drilling more than one billion feet every year.

SANDVIK COROMANT bits are supplied through Atlas Copco, the world's largest manufacturer of rock drills, who also supply Sandvik Coromant integral steels — the most widely used in the world — and Sandvik Coromant extension steel equipment.

THESE STANDARD SIZES ARE AVAILABLE

	THREAD	DIAMETERS AVAILABLE (IN INCHES)														
SHOULDER TYPE	7/8" F	1½														
	1" H	1½	1⅝	1¾	1⅞											
	1 3/16" D					2	2⅛	2¼	2⅜	2½	2¾	3				
	1 11/16" K											3	3½	4	4½	
BOTTOMING TYPE	1¼" Rope				1⅞	2		2¼		2½						
	1½" Rope									2½	2¾	3	3½	4		
	2" Rope												3½	4	4½	5
	400					2		2¼		2½						
	600									2½	2¾	3	3½			

Shaded area indicates X-Bits

Write, phone or cable today for further details to any of the addresses below:

Atlas Copco

ATLAS COPCO EASTERN INC., *P.O. Box 2568 Paterson, 25, N.J. Phone Armory 4-3310*
ATLAS COPCO PACIFIC INC., *930 Brittan Ave., San Carlos, Calif. Phone Lytell 1-0375* **ATLAS COPCO CANADA LTD.**, *Montreal Airport, Quebec. Phone Melrose 1-5571* **ATLAS COPCO MEXICANA S.A.**, *Apartado Postal 56, Torreón, Coahuila. Phone 39-07*

DSS.78

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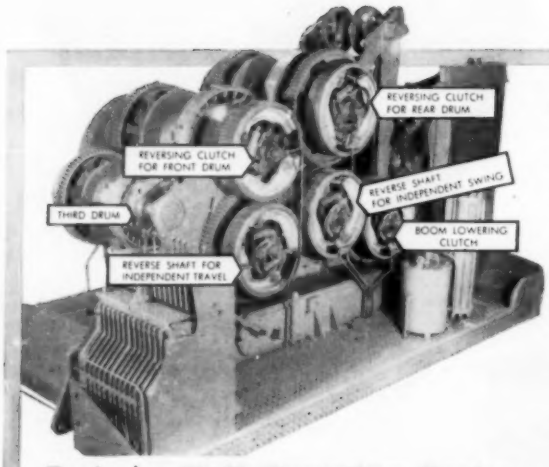
Only with Link-Belt Speeder ***Full-Function*** *design...*

all these features



STANDARD FEATURES	LS-98	OTHER 1-YD. MACHINES* RIG A	RIG B	RIG C	RIG D
• Full power hydraulic controls	x				
• Hydraulic power steering	x				
• Independent rapid boomhoist	x	x	x		x
• Fully interchangeable, self-adjusting clutches	x				
• Two-speed travel in either direction through gear reduction	x	x			
OPTIONAL FEATURES					
• Reversing clutches for one drum	x	x	x		x
• Reversing clutches for both main drums	x				
• Boom lowering clutch	x			x	x
• Third drum without restricting any other function	x			x	
• Independent swing and travel without restricting any other function	x				
• Torque converters	x		x		x

*Ask your Link-Belt Speeder distributor for the facts behind this comparison.

Exclusive ***Full-Function*** *Design*

Each of these functions, as keyed above, operates with its own power train and therefore independently of all other operations. This design permits more versatility . . . . assures longer life.

Get a profit bonus with these standard features... tailor the machine to the job with these optional features

Exclusive with Link-Belt Speeder—revolutionary *Full-Function* design provides a separate power train for each machine function.

That's why you can have and use all these 11 major features on the same machine—without restricting other operations.

Practically double power train life

And that's why *Full-Function* design spreads wear over more clutches, shafts, gears and bearings. Only the power trains in use are under load!

But this is only one of the many Link-Belt Speeder advantages. You also get—

- **Greater usable horsepower**
- **Speed-o-Matic—proven power hydraulic controls**
- **Bonus crane capacity working with long booms at extended radii**

For complete details, contact your distributor. Or write Link-Belt Speeder Corporation, Dept. RP-158, Cedar Rapids, Iowa, for Book No. 2553. 14,781

LINK-BELT SPEEDER

It's time to compare . . . with a Link-Belt Speeder

on one shovel-crane

HARDNESS IS IMPORTANT

NO. 2 OF A SERIES

Carbex Triple-Forged Grinding Balls are carefully and thoroughly heat treated to attain a uniform hardness to their tough, shock-resisting core, assuring better grinding surfaces, uniform performance, longer and more even wear. These qualities in the Coates Grinding Balls produce extreme hardness for wear, and toughness to prevent breakage under strain of milling.

Coates Carbex Grinding Balls are made of fine-grained, high-carbon steel. Produced by skilled workers according to proved specifications guarded by continuing quality controls, they have earned an international reputation for quality and performance. Call for Coates Carbex Grinding Balls . . . built with care for longer wear.

Write today for prices . . . All sizes—½" to 5" carried in stock for immediate shipment.

C857-B

COATES STEEL CARBEX TRIPLE-FORGED BALLS PRODUCTS CO.

COATES STEEL PRODUCTS COMPANY

GREENVILLE, ILLINOIS

LARGEST EXCLUSIVE MANUFACTURER OF GRINDING MEDIA

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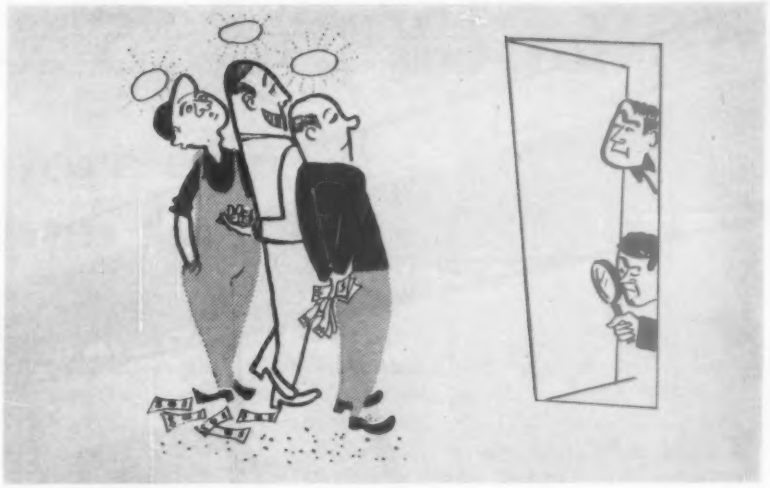
continued from page 26

leave was to be granted, and the reason for the leave as well as the company's needs had to be taken into consideration. Quarrez still felt that he had a right to the leave, and took the case up to arbitration.

Was the foreman:
Right? ☐ Wrong? ☐

What Arbitrator Wa..e Ruled:

"The proper discharge of normal management responsibilities requires that the company have control over the number and type of employes on duty. Even though the published rule does not specifically indicate that leaves are within the discretion of management, it would be most unrealistic and impractical to assume that it was intended to allow workers individually to decide when and to whom leaves are to be granted. The rule must be interpreted to mean that leaves of over two weeks will not be granted unless the circumstances are most unusual, whereas shorter leaves will be granted at the company's discretion. Grievance denied."



Can you fire employes for shooting dice on company premises?

What Happened:

FOLLOWING RUMORS of gambling on company property, a group of supervisors decided to make a surprise raid on a spot where they suspected that gambling might be going on. On entering the room they found five employes grouped around a table. One of the men was seen pocketing a pair of dice, another was holding money in both hands, and $1.75 was on the table. All five men were fired. They filed a grievance stating that they were lunching in the room at their regular lunch hour. The man with the money in his hand was the one who normally collected from the others to go out and get coffee and sandwiches. The supervisors maintained that they had seen the dice and the money on the table. None of the men were seated and eating at the time. The case was brought to arbitration when no informal settlement was possible.

Were the supervisors:
Right? ☐ Wrong? ☐

What Arbitrator R. W. Fleming ruled:

"After weighing the conflicting testimony I am inclined to give credence to the evidence that the man pocketing the dice and the man holding the money were engaged in gambling. There was no substantial or convincing evidence linking the others with the crap game. They were legitimately in the room on their lunch hour. Discharge is too severe a penalty for a first offense of gambling which was unconnected with the organized gambling world, and where there was no previous warning or notice concerning gambling in the plant. The loss of back pay is adequate remedy closely approximating the fine that would have been imposed in a court for this offense. Since the other employes were not connected by substantial and convincing evidence with the offense, they shall be reinstated with back pay."

END

Can you fire worker who beats up foreman off company premises?

What Happened:

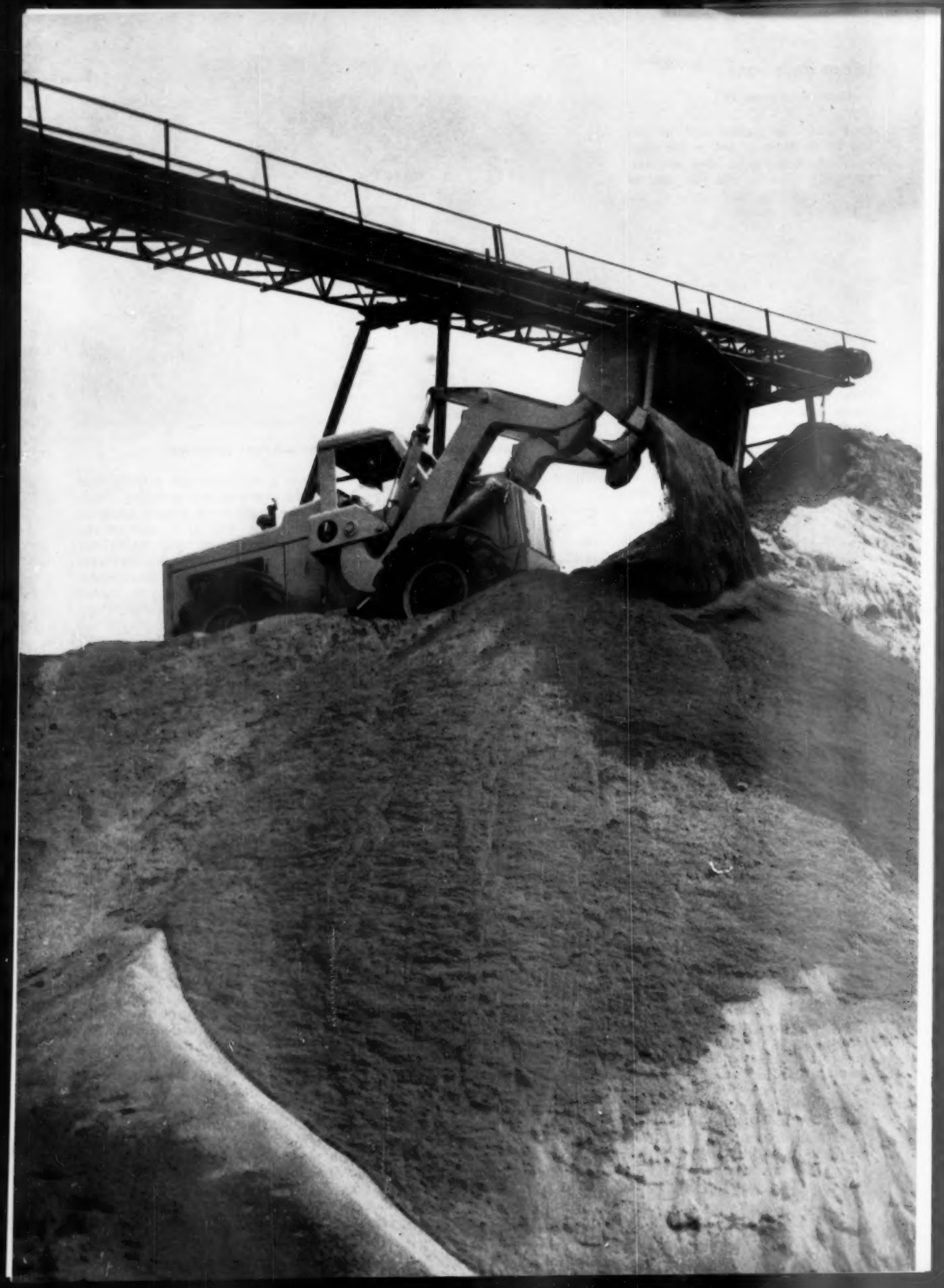
THE FOREMAN ACCUSED the worker of violating a company rule. The worker denied it in colorful and heated language. Both the rule breaking and the language were entered on the worker's personnel record. After work, the employe approached the foreman in the company parking lot and asked him to discuss the matter. The foreman refused, got into his car and drove home. The worker got into his own car and followed the foreman. Outside the foreman's house, the worker landed a haymaker which knocked the foreman down. The foreman got to his feet and started to swing back but was deterred by a neighbor. Next day, the worker was fired. He objected that the fight was a personal matter, unrelated to work. They had never gotten along well. What's more, the worker maintained, the scrap took place outside of working hours and off company property and was none of the company's business.

The company insisted that the assault on the foreman was a direct result of his exercise of his supervisory responsibilities, and that where-and-when it occurred had nothing to do with the case.

Was the company:
Right? ☐ Wrong? ☐

What Arbitrator Blair ruled:

"Careful study of the evidence shows that Handley (the worker) did deliberately plan and then carry out an assault upon the foreman at the latter's home; second, that this assault arose directly out of the working relationship between two employes, one having supervisory authority over the other; and third, that if such an assault were condoned, it would affect working conditions in the plant. On these grounds, it must be held that the company has established proper cause for discharge."



"...does 75% of our loading ...more efficient than any other loader we have used"

The Frank Bushika plant at Cheshire, Mass., produces three sizes of stone plus mason and concrete sand and bank run gravel. Its model HO "PAYLOADER" is used to load trucks with all grades of material, to level stockpiles and do a variety of lugging and maintenance work. Since it came on the job, it has taken over most of the loading from two other makes of loaders.

According to Frank Bushika, Jr., a partner, "the HO 'PAYLOADER' is definitely more efficient than any other loader we have used. It does 75% of our loading work and the other two loaders stand by mostly. The high reach, moveability and speed of the HO to change locations and load from numerous stockpiles are big advantages in our operation."

A 4-wheel-drive "PAYLOADER" will also give *you* more machine for your investment. Its unique bucket action gets and retains bigger loads; power-transfer differentials plus heavy duty axles assure reliable traction on mud, gravel, ice and snow and more digging power; power-shift transmission, power-steering and 4-wheel power brakes are just a few of the features that make them outperform any comparable size of tractor-shovel.

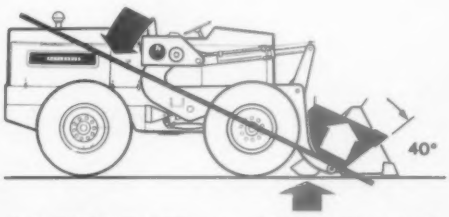
Your nearby Hough Distributor is ready to prove it. Contact him today.

Ask about...

PURCHASE AND HOUGH LEASE PLANS

Now your Hough Distributor has at his disposal the broadest and most complete set of financing plans ever offered:—TIME PAYMENT . . . LEASING PLANS,* with or without OPTION TO PURCHASE—any and all kinds of financing to best fit your needs for the purchase of "PAYLOADER" equipment. See him today.

* *Available in Continental U.S.A.*



40° ROLL-BACK AT GROUND LEVEL produces a tremendous pry-out force by using break-out pads at bottom of lifting arms as ground support or fulcrum . . . keeps bucket close to machine for maximum stability and carry capacity.

PAYLOADER®
MANUFACTURED BY
THE FRANK G. HOUGH CO. LIBERTYVILLE, ILL.
SUBSIDIARY—INTERNATIONAL HARVESTER COMPANY

THE FRANK G. HOUGH CO.
705 Sunnyside Ave., Libertyville, Ill.

Send data on 4-wheel-drive "PAYLOADER" tractor shovels:

- ☐ Model HO (9,000 lb. carry capacity)
- ☐ Model HH (7,000 lb. carry capacity)
- ☐ Model HU (5,000 lb. carry capacity)

NAME_____

TITLE_____

COMPANY_____

STREET_____

CITY_____ STATE_____

1-B-3

P&H 3/4 yd. shovel has a mighty appetite!

At pit, plant or yard, no matter what the job—digging, loading, rehandling sand and gravel—the P&H Model 255A has a mighty appetite for work at a profit!

You will get higher production from a P&H 255A with these features:

- **All-welded construction for stamina and strength**
- **P&H hydraulic controls for smoother and faster boom motions**
- **Larger P&H brakes give better braking action**
- **Faster swings with the famous P&H live roller circle**

See your P&H dealer soon for the *profitable* 255A story—a story that gets even more profitable when you order your 255A equipped with a P&H Diesel Engine. It's the highly responsive engine with greater torque that outperforms other diesels.

Get the ¾ yard shovel with the BIG appetite for outstanding performance—the P&H 255A.

HARNISCHFEGER

Construction & Mining Division
Milwaukee 46, Wisconsin

THE P&H LINE Excavators: ½ • ¾ • 1½ • 1¾ • 2½ and 3½ yards
Truck Cranes: 10 • 12½ • 15 • 20 • 25 • 30 • 35 and 45 tons

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PEOPLE IN THE NEWS

Leap and McKercher named Louisville superintendents

Clifford Leap

Bruce McKercher

CLIFFORD LEAP, formerly construction and maintenance engineer, has been named superintendent of the Speed, Ind., stone and shale quarries of Louisville Cement Co., Louisville, Ky., and Bruce McKercher, who has been in charge of the engineering department, has been named superintendent of construction.

Mr. Leap, a graduate of the University of Louisville with a B.S. degree in civil engineering, joined the company in 1935 as a draftsman. In 1939 he was appointed construction and maintenance engineer. In his new position, he will be responsible for all activities at the company's stone and shale quarries at Speed.

Mr. McKercher will be in charge of construction activities at Speed. A graduate of the University of Louisville with a B.S. degree in mechanical engineering, Mr. McKercher joined the engineering department at Speed in April of last year.

Clarence R. Wolf awarded honorary doctorate

CLARENCE R. WOLF, president and co-founder of the New Jersey Silica Sand Co., Millville, N.J., and president of the National Glass Sand Co., was awarded the honorary degree of doctor of science by Lafayette College, Easton, Pa., at the recent Founders' Day celebration.

After graduation from Lafayette College, Mr. Wolf served as a teacher of English at Easton High School from 1911 to 1918. During that time he also completed courses in administration and supervision at the Post Graduate School at Columbia University, New York, N.Y., after which he became principal of Millville High School. In 1921, he and Burdette Tomlin became interested in properties of silica sand in Cumberland County. He gave up the teaching profession in 1923 to devote full time to the sand business.

Several years ago, Mr. Wolf helped to modernize the foundry department of the mechanical engineering department at Lafayette College, and has established scholarships in several of the departments.

Among his other interests is the raising of holly, which he started in 1926, and now has an orchard of over 4,500 trees, the largest private collection of hollies in the world. He has developed 11 new varieties and at present has a three-year research fellowship at Rutgers University on "holly hybridizing." An article on Mr. Wolf's holly orchard appeared in ROCK PRODUCTS, December, 1952, p. 90.

Johns-Manville executive

ADRAIN R. FISHER has been named chairman and chief executive officer of Johns-Manville Corp., New York, N.Y., in addition to his duties as president and director. Mr. Fisher succeeds Leslie M. Cassidy, who has retired because of ill health but will continue as a director and consultant to the company. Clinton B. Burnett, general manager of the packings and friction materials division, has been elected to serve as executive vice president and director.

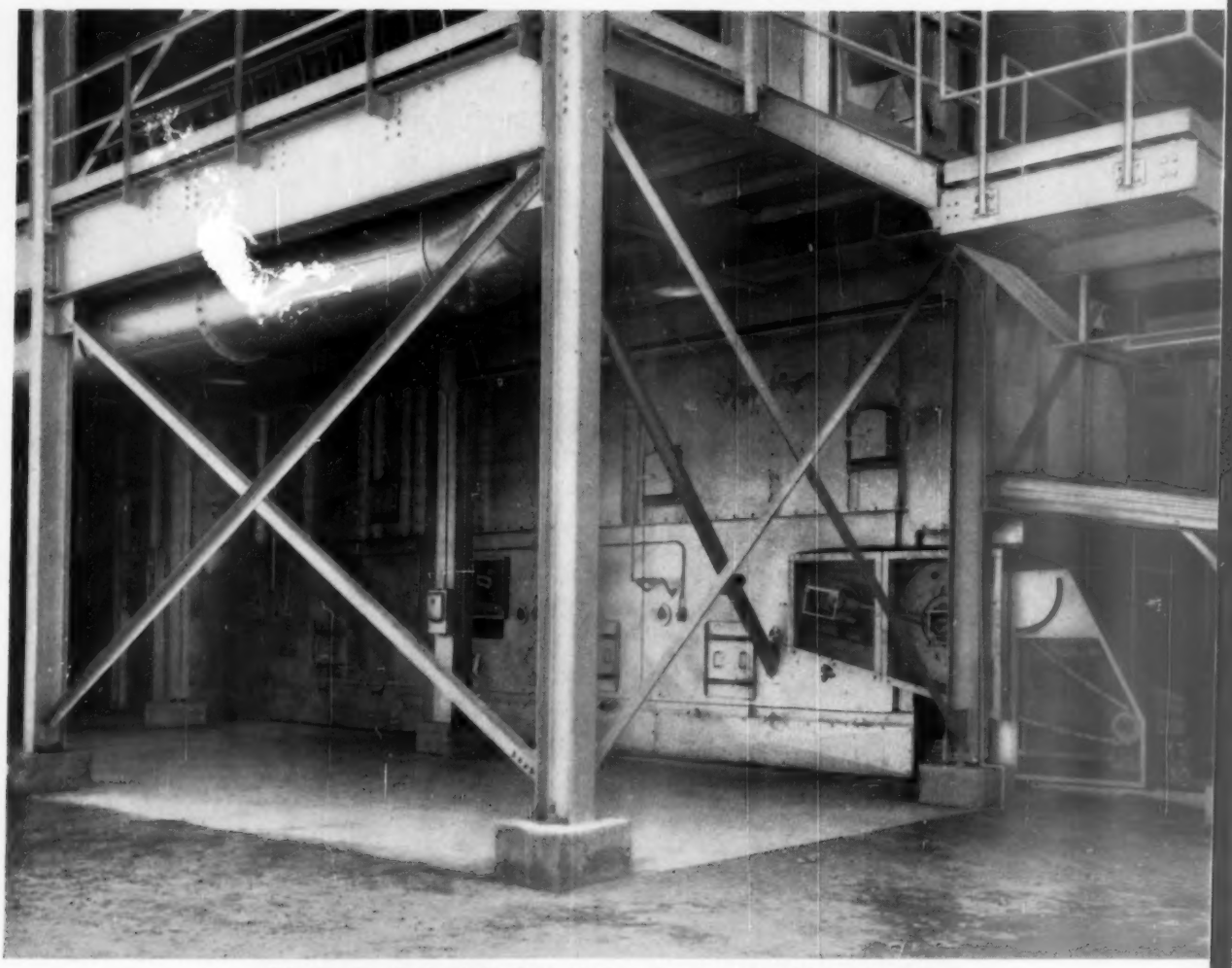
Mr. Fisher joined the company in 1923 as superintendent of the asphalt roofing department at the Waukegan, Ill., plant. In 1951 he was elected a director and president.

Mr. Cassidy was elected president and a director of Johns-Manville Corp., in January, 1951, following the retirement of president R. W. Lea, and two months later became chairman upon the death of Lewis H. Brown. Mr. Cassidy joined the company in 1926 after graduation from the Wharton School of Finance and Commerce of the University of Pennsylvania, Philadelphia, Pa.

Association officers

WILLIAM E. HOLE, JR., vice president of American Aggregates Corp., Greenville, Ohio, was elected president of the Ohio Sand and Gravel Association at its annual meeting in Columbus. He succeeds J. E. Martin, Enon Sand and Gravel Co., Enon, Ohio. W. E. Pohlman, manager of the Columbus, Ohio, plant of American Aggregates Corp., was named treasurer of the Association. Claude L. Clark was re-elected executive secretary.

(Continued on page 38)



Side view from feed end of a 7′ x 44′ horizontal cooler, designed for cooling 4000 barrels of Portland cement clinker per day, showing crank type grate drive.

Announcing...

the FULLER HORIZONTAL-GRATE

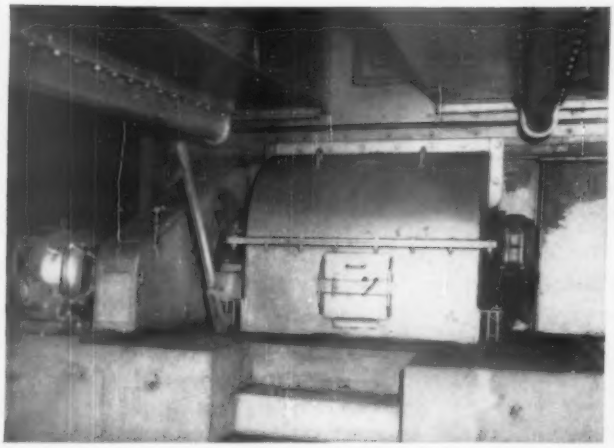
The new Fuller Horizontal-Grate Cooler is a further development and outgrowth of the Fuller Inclined-Grate Cooler, so successfully applied to the cooling of Portland cement clinker and other rotary kiln products in the chemical-process industry, hundreds of which are today in successful operation. Without doubt, this latest development will meet with the same high degree of acceptance and success as its predecessor. Two units are now in operation — twelve more are under construction. Above is a horizontal unit installed in a southern cement plant.

We will, of course, continue to manufacture both types of coolers, enabling us to furnish equipment best suited to meet varying conditions encountered in many plants.

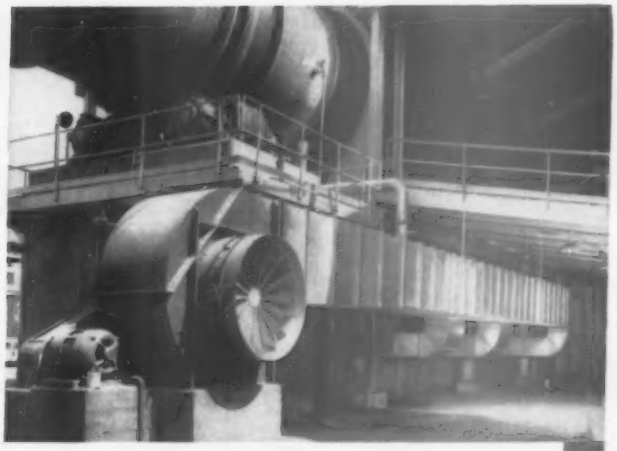
for details and specifications.
See Chemical Engineering Catalog

Pertinent features of the Fuller Horizontal-Grate Cooler, are:

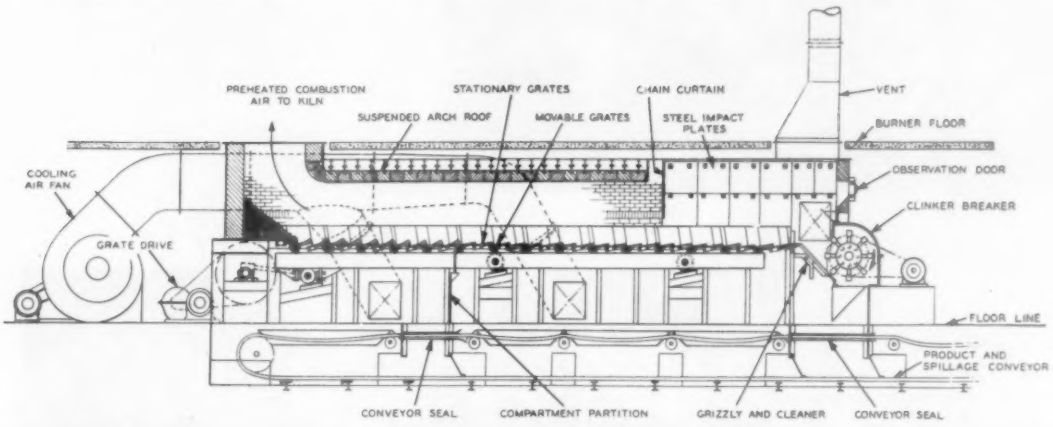
Requires a minimum of headroom
Short length if necessary
Improved efficiency of cooling
Better control of secondary air temperature
Increased grate life
Less refractories
Shorter erection time



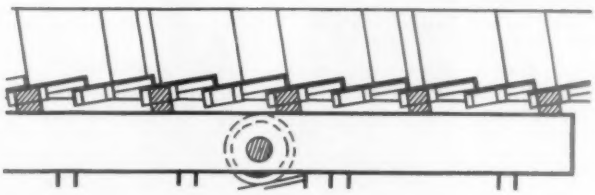
Discharge end of cooler equipped with heavy-duty clinker breaker; vent duct to stack.



Side view of cooler showing air supply and distributing ducts to undergrate air chamber.



COOLER



The improved and more rapid overall distribution of material on the grate of the horizontal cooler permits the use of a short, wide cooler, where length is limited. Improved air diffusion increases the efficiency of the cooler and contributes toward better secondary air temperature control.

Power and air requirements of either cooler are substantially the same.

FULLER COMPANY GENERAL AMERICAN TRADE MARK

Fuller

. . . . pioneers in harnessing AIR

CO-32T
4482

FULLER COMPANY

102 Bridge St., Catasauqua, Pa.

SUBSIDIARY OF GENERAL AMERICAN TRANSPORTATION CORPORATION

Birmingham • Chicago • Kansas City • Los Angeles • San Francisco • Seattle

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FACES AND PLACES

. . . Candid shots of people in the

Guests of Power Authority

A box lunch on the banks of the St. Lawrence was enjoyed by members of Empire State Sand, Gravel and Ready Mix Association and their wives who were guests of the New York State Power Authority. They inspected the dams and locks of the Seaway project near Massena, N.Y.

Safe drivers applauded

Pictured are some of the 39 Calaveras Cement Co. transport and quarry drivers who received awards for from one to fourteen years of driving without an accident. Left to right, they are: Front row—W. Miladinovich, Don Daily, C. Correll, Bryce Jasper; Middle row—Vic Villegas, Dave White, Clyde Frazier, Don Ostrom, Clyde Rainey, Alfred Whited, Dave Bishop, Lino Marzi; Rear—Norman Chatfield, Ernest Koehn, Mel Walsh, Bill Kramer, John Whaley, Doug Castelin, Mel Nayden.

Set lifetime records

Eight veteran employes of New York Trap Rock Corp. were honored for setting remarkable safety records, each having worked more than 41 years in quarries without suffering a disabling injury. John Eagan, second from right, has a record of 69 years. The men, who hold their Joseph A. Holmes Safety Association certificates of honor, are, left to right: Walter Bobb, 43 years; Frank Covati, 45 years; George Kelleher, 42 years; Bernard Grall, 41 years; Angelo DiMartino, 51 years; Bernard Finn, 41 years; Mr. Eagan, and George Keenan, 41 years

He directs operations

An important member of the firm of Union Sand and Gravel Co., Spokane, Wash., is W. E. Kellog, vice president in charge of operations. Mr. Kellog is seen at the company's Yardley plant

Touring silica plants

Dr. Clarence E. Wolf, president of New Jersey Silica Sand Co., Millville, N.J., right, kept his camera handy on a western tour of industrial sand operations. He is pictured with Henry Benech, metallurgist at Del Monte Properties Co., Pebble Beach, Calif.

New name in silica

E. V. Hickman is plant superintendent for the Overton, Nev., plant of U. S. Silica Corp. His plant was one of those toured by Dr. Wolf on a recent fact finding trip

Visitors study HMS plant

The first heavy media separation plant in Southern California is that of Saticoy Rock Co. near Ventura. The new equipment for upgrading aggregates taken from the nearby Santa Clara River was viewed by visitors with much interest

(Continued on page 42)

Quarry work's brutal on equipment. Are your engines ready for a full season?

Each engine on your job is a key unit. A failure during the work season ahead could tie up your spread and wreck contract dates. So a look at your engine lineup now will pay dividends.

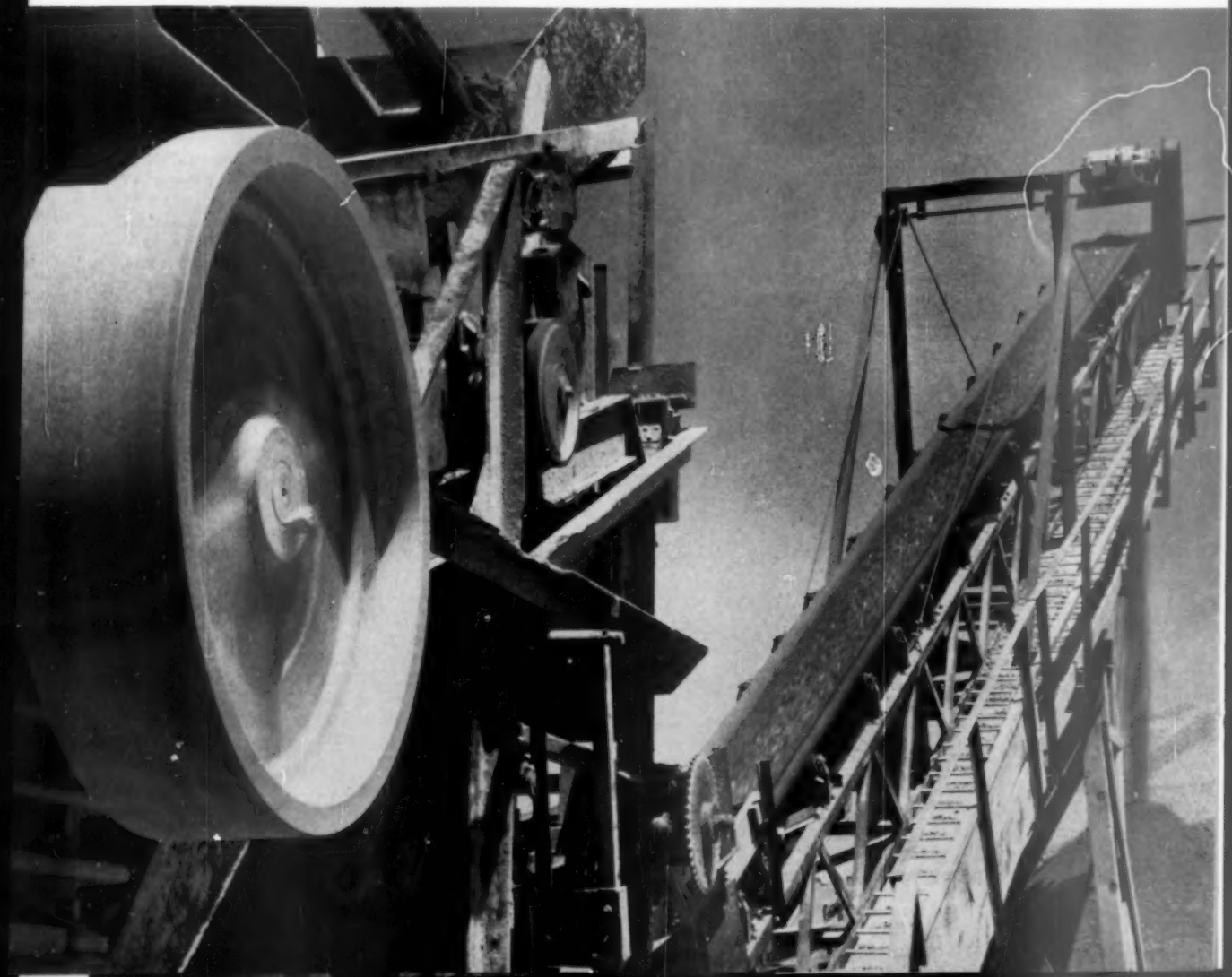
For the *tough* work, you can't beat a CAT* Engine for dependability, low operating cost and top production. That's why the men whose livelihood depends on full-time job production prefer Caterpillar* Diesel Engines by a country mile.

Whether it's to power a crusher, asphalt batcher, shovel, dredge or other vital machinery, there is a modern Cat Diesel Engine to fit your exact requirements. The fine-tolerance workmanship and superior metals which go into these engines will give you dependable performance, minimum down time and low operating cost.

If you have power problems, get the expert advice of your Caterpillar Dealer Installation Engineer. He can show the right fit of power for any job.

Cat Engines by the thousands have proved their ruggedness and total cost economy. Maurice Gredvic, owner of the Riverside Sand and Gravel Co., said of the D397 powering his crusher: "We have excellent service from our Cat Engine—haven't

Cat D397 Electric Set powers this 4-unit Cedarapids & Symons portable crusher plant 100% (below). The Riverside Sand & Gravel Co. operation shown is producing gravel for surfacing 14 miles of state highway from Alfalfa to Mabton, Wash.



ENGINE POWER BY CATERPILLAR

had any down time, haven't had any overhaul." William Tregembo, plant superintendent of Harms Bros., says: "This company has always been in favor of Caterpillar equipment because of stability and dependability. In the long haul and day-after-day running, you don't beat Caterpillar products for long life and minimum down time!"

If down time might kill you this season because of a sick engine, pick up the phone today and ask your nearby Caterpillar Dealer Installation Engineer for profitable advice on powering or repowering.

Engine Division, Caterpillar Tractor Co., Peoria, Ill., U. S. A.

*Caterpillar and Cat are Registered Trademarks of Caterpillar Tractor Co.

Powering this asphalt batch plant (above) is a D397, chosen for rugged dependability. Harms Bros., general contractor, resurfaced 27 miles on Highway U. S. 466. Capacity of batch plant 5,000 lbs. per batch — did as high as 200 tons per hour.

Feeding hopper for Ellefson Bros. rock and gravel crusher (above) is Koehring shovel powered by rugged D318. Job site northeast of Gays Mills, Wisconsin. Says E. S. Ellefson: "We've used Cat stuff since '45, for their long life and dependable service."

One of two lighting towers powered by Caterpillar D311 Diesel Electric Sets for night lighting operations on Coralville Dam near Iowa City. Towers carry eighteen 1,000-watt lights, and Cat Electric Sets are relied on for their proven dependability.

Cylinder liners typical of quality in Cat Engines

Full-length replaceable wet-type liners carry the heat away from critical wear areas — give longer life to pistons and rings. With a tensile strength of 70,000 psi, these liners are typical of superior Cat workmanship and material going into each engine component.

Dept. RP-2, Engine Division
CATERPILLAR TRACTOR CO., Peoria, Illinois, U. S. A.
Send me more information about Caterpillar Diesel Engines for prime and repowering use. I have checked the proper box to guide your selection of material.

☐ I would like detailed information, as I may be in the market for a Cat Diesel Engine or Electric Set. I understand that I am under no obligation.

☐ I am interested in learning more about these engines.

Name _____

Company _____

Address _____

City _____ *Zone* ____ *State* _____

PEOPLE IN THE NEWS

(Continued from page 39)

New PCA board members

EUGENE D. HILL, president, Louisville Cement Co., Louisville, Ky.; C. T. Fuller, vice president, Allentown Portland Cement Co., Allentown, Penna.; B. B. Pelly, vice president, Olympic Portland Cement Co., Ltd., Seattle, Wash.; and L. T. Welshans, general manager of the cement and coke division, Standard Portland Cement Division, Diamond Alkali Co., Cleveland, Ohio, have been elected members of the board of directors of the Portland Cement Association, Chicago, Ill. George E. Warren, president, Southwestern Portland Cement Co., Los Angeles, Calif., elected last year for a two-year term, continues as chairman of the board of directors.

Retiring directors are: Ben W. Calvin, president, Aetna Portland Cement Co., Bay City, Mich.; D. A. Symmes, president, Glens Falls Portland Cement Co., Glens Falls, N.Y.; and C. F. Lewis, president and manager, Volunteer Portland Cement Co., Knoxville, Tenn.

Heads Liberty Limestone

GORDON R. WILLIS has been named president and treasurer of Liberty Limestone Corp., Buchanan, Va. A graduate of the University of Kentucky, Lexington, Ky., Mr. Willis has been an officer and member of the board since 1949. W. Kent Ford has been appointed vice president; John R. Rise, sales manager; C. W. Stull, secretary and purchasing agent; J. D. Hawkins, assistant treasurer; W. O. Breedlove, plant manager at Rocky Point and R. C. Smith, plant manager at Buchanan. O. M. Stull is chairman of the board.

Standard Paving appointments

WILLIAM ZIMMERMAN has been named chairman of the board of Standard Paving & Materials, Ltd., Toronto, Ont., Canada, and J. H. Reid has been appointed president. Mr. Reid has been associated with the company for over 25 years and was formerly executive vice president.

Service engineer

GEORGE GOWEN has been named service engineer of the Florida Portland Cement Division of General Portland Cement Co., Tampa, Fla. He was formerly control engineer for the Ready Mix Concrete Co., Fort Lauderdale, Fla.

Cement division marketing director named

Jack M. Murray

Richard C. Rial

JACK M. MURRAY has been promoted to director of marketing for the Green Bag Cement Division of the Pittsburgh Coke & Chemical Co., Pittsburgh, Penna. He was formerly sales manager of the division and will be succeeded by Richard C. Rial, who has been assistant sales manager.

Mr. Murray joined the company in 1931 as a cement salesman and subsequently became assistant sales manager and then sales manager. A native of Pittsburgh, he attended Bellefonte Academy and graduated from the University of Pittsburgh. In addition to directing customer relations, Mr. Murray will assist the general manager of the cement division in analyzing and formulating new sales policies and plans for the division.

Mr. Rial was born in Greensburg, Penna., is a graduate of the Kiskimentas School, and studied business administration at the University of Pittsburgh. He became associated with the company in 1941 as auditor of the activated carbon division, and later joined the Green Bag Cement Division as salesman, later becoming assistant sales manager.

George C. Wilsnack retires from research post

GEORGE C. WILSNACK has retired as director of research for Ideal Cement Co., Denver, Colo. He has been director of research since 1950 and in charge of the research center at the Boettcher plant since it was completed in 1953. Born in Berlin, Germany, Mr. Wilsnack moved to Pullman, Ill., with his family at an early age. He attended the Armour Scientific Academy and was graduated from the Armour Institute of Technology, Chicago, Ill., with a B.S. degree in chemical engineering. He first served as assistant chief chemist for the International Harvester Co. at Chicago and later as an instructor in industrial chemistry at the Armour Institute.

Mr. Wilsnack joined the Ideal Cement Co. in 1942 as general chemist after having served 10 years as chief chemist for the Universal Portland Cement Co. at Buffington, Ind., and 17 years as chief chemist of the Edison Portland Cement Co. at New Village, N.J. In his work for Universal Portland Cement Co., Mr. Wilsnack developed a formula for combining the raw materials of cement production. Later he worked with Thomas A. Edison in the Edison Portland Cement Co. in developing long kilns. He received an honorary doctor of science degree from the University of Denver in June, 1956.

T. W. Rosebaugh has been appointed vice president for research and exploration. He was assistant to the president of Pacific Portland Cement Co. when it was merged with Ideal in 1952. At that time he became a vice president of Ideal.

Kenneth E. Palmer, who has been assistant to Mr. Wilsnack, has been named manager of the research center laboratories. He joined Ideal as a research technician in the central laboratory at the Boettcher plant in 1946. He was research laboratory manager from 1950 to 1953, when he was appointed assistant to the director of research. He is a native of Kingman County, Kan., and a graduate of Kansas State College, Manhattan, Kan., where he received a bachelor of science degree in industrial chemistry and engineering.

(Continued on page 44)

Stripping 20 feet of overburden at a phosphate mine near Mt. Pleasant, Tenn. This TD-24 rolls full blades of topsoil and clay 150 feet — in only 40 seconds. The blade is an International cable 'dozer. Owner of the outfit: Rochelle and Collison, Mt. Pleasant, Tenn.

PLANET POWER STEERING...THE BIG DIFFERENCE...

MAKES THE

TD-24...the rig for stripping

...reports Rochelle & Collison, Mt. Pleasant, Tenn.

Mining contractors, Rochelle and Collison, have compared costs, work-production and profits, and have the answer: the Planet Power steered International TD-24 is tops for tough overburden stripping!

"The TD-24 is the machine for stripping," declares George E. Collison, Jr., for the contracting firm. "Being able to steer under load without stopping one track makes the big difference.

"Planet Power steering plus the fast reverse keeps the TD-24 producing while other machines are loafing.

"For side-cutting (or benching), the TD-24 has no competition. Its rear end doesn't scoot away from the bank—not with the inside track in high range, and the outside in low!"

"Dead-track drag" eliminated

Any king-sized steering-clutch crawler can only give you one-track power on the turns. TD-24 Planet Power steering eliminates power-wasting "dead-track drag." TD-24 full time two-track power means full-load push or pull on the turns, as well as straightaways!

Exclusive TD-24 Hi-Lo shifting permits instant gear-changing on the go—without stopping or even declutching. Fingertip matching of speed to load under full power speeds production!

Find out how these and all the other TD-24 production exclusives can make the big difference in your profit-making capacity. See your International Construction Equipment Distributor for a TD-24 demonstration!

INTERNATIONAL® CONSTRUCTION EQUIPMENT

International Harvester Co., 180 N. Michigan Avenue, Chicago 1, Illinois

A COMPLETE POWER PACKAGE: Crawler and Wheel Tractors... Self-Propelled Scrapers... Crawler and Rubber-Tired Loaders... Off-Highway Haulers... Diesel and Carbureted Engines... Motor Trucks... Farm Tractors and Equipment.

PEOPLE IN THE NEWS

(Continued from page 42)

Gordon Tongue named vice president of Ideal

GORDON TONGUE, formerly president of Northwestern Portland Cement Co., Seattle, Wash., has been named vice president of Ideal Cement Co., Denver, Colo. Ideal recently acquired the properties and business of Northwestern Portland Cement Co., which will now be known as the Northwestern Division, Pacific Region. W. J. Conway, Pacific regional sales manager, will supervise sales and E. F. Bollinger, Pacific regional production manager, will supervise plant and quarry operations. A. G. Stubblefield, formerly Montana division sales manager, has been named sales manager, and George A. Lunday, assistant sales manager of the Montana division, will be in charge of sales in that division. Frank Baldwin continues as plant superintendent at the Grotto, Wash., plant of the Northwestern division; James Halloran remains as quarry superintendent, and F. L. Richards continues as chief chemist and plant engineer, positions formerly held with Northwestern Portland Cement Co.

Kaiser sales manager

RALPH A. NETZER has been appointed sales manager for Kaiser Sand and Gravel, a division of Henry J. Kaiser Co., Oakland, Calif., according to an announcement by R. S. Barneyback, general manager. Mr. Netzer has been with the division for 11 years and replaces C. H. Carson, now a special assistant to the general manager supervising coordination between order and plant production departments. He has served in all phases of the company's operations including accounting, quality control laboratory, sales, and supervising a sand and gravel plant.

Columbia Cement positions

A. H. MEINRATH has been appointed plant superintendent of the Columbia Cement Division of the Columbia-Southern Chemical Corp., a wholly owned subsidiary of the Pittsburgh Plate Glass Co. Formerly project engineer in charge of plant expansion, Mr. Meinrath will be responsible for plant production, engineering, maintenance, purchasing, storeroom and research and development. Previously he was assistant superintendent of production at the Corpus Christi, Texas, plant.

Following graduation from the University of Texas, Austin, with a degree in chemical engineering, Mr. Meinrath joined the Southern Alkali Co. at Corpus Christi. In 1946 he transferred to the Lake Charles plant of the Columbia-Southern Chemical Corp. Returning to the Corpus Christi plant, he served in technical service and in the engineering department as well as in production.

E. Carl Kreager, formerly assistant to the plant superintendent, has been named plant production superintendent of the Columbia Cement Division and will be responsible for the mine, mill, quarry, railroad, powerhouse, shipping and laboratory departments. He has been associated with the division since 1925, spending most of his time in research and development.

G. R. Grimsley has been appointed to the newly created position of special assistant to the general manager. He joined the Columbia Cement Division in 1924 as a chemist. In 1926 he was promoted to chief chemist and in 1931 he was elevated to assistant superintendent. He has been plant superintendent since 1943.

Celotex research manager

JAMES R. ROBERTS has been named research manager of The Celotex Corp., Chicago, Ill., producers of gypsum and mineral wool products.

Public relations director

M. O. CHENOWETH has been appointed director of public relations of the American Society of Civil Engineers, New York, N.Y. A native of Ohio and a graduate of Ohio State University, Columbus, Ohio, with a B.S. degree in journalism, Mr. Chenoweth for the past 14 years has been associated with Selvage & Lee, industrial public relations counsel.

Vice president of sales

FRANKLIN P. TAYLOR, JR., has been appointed vice president of sales for Buffalo Crushed Stone Corp., Buffalo, N.Y., a subsidiary of Houdaille Industries, Inc. He succeeds Elmer F. Lux, who has resigned. Mr. Taylor was formerly general manager of the Amherst Ready Mixed Concrete Corp. Previously he served with the Buffalo Gravel Corp.

Joins PCA fellowship staff

DR. J. H. ATKINS has joined the staff of the Portland Cement Association Fellowship at the National Bureau of Standards, Washington, D.C. Formerly with the Westinghouse Atomic Power Division, Dr. Atkins will do fundamental research on the physical chemistry of hydrous silicates.

OBITUARIES

Wilson Perkins Foss Jr., chairman of the board of the New York Trap Rock Corp., New York, N.Y., for the past 27 years, died November 17. He was 66 years old. Born in Haverstraw, N.Y., Mr. Foss received B.A. and Ph.B. degrees from Yale University, New Haven, Conn. Mr. Foss' father was one of the founders of Conklin & Foss, Inc., predecessor of New York Trap Rock Corp., of which his son, Wilson Perkins Foss III is president.

G. Lester Williams, retired vice president of American Cyanamid Co., New York, N.Y., died October 25 after a short illness. Mr. Williams was president of the Structural Gypsum Corp., New York, at the time of its affiliation with American Cyanamid Co., and became vice president. Born in Red Bank, N.J., Mr. Williams had been an industrial management consultant since his retirement 20 years ago.

George Gates Robinson, president of Standard Paving and Materials, Ltd., Toronto, Ontario, Canada, died October 25 at the age of 66. Born in Woodsport, N.Y., Mr. Robinson joined Portland Cement Ltd. upon his graduation from Cornell University, Ithaca, N.Y., with a degree in civil engineering. Two years later he became associated with the Canada Cement Association, Montreal, where he remained until 1919. Mr. Robinson had been a director of Standard Paving and Materials since 1929, and became president and chairman in 1946.

Mr. Robinson was also president of Concrete Pipe Ltd., Consolidated Sand and Gravel Ltd., National Sand and Gravel Co. Ltd., and vice president of National Slag Ltd. A past president of the Ontario Roadbuilders' Association and the Canadian Construction Association, Mr. Robinson was a director of Canada Building Materials Ltd. and the Guaranty Trust Co. of Canada.

Lester N. Rumbaugh, owner and operator of the Rumbaugh Sand and Gravel Co., Xenia, Ohio, died October 15. He was 53 years of age.

END

New UDT-1091 Turbotorque® diesel powers high output limestone plant

This UDT-1091 Turbotorque Diesel is smoothly driving the high output Pioneer Duplex portable limestone crushing and screening plant owned by D. F. Jones Material Co., Little Rock, Ark., to full capacity... and with power to spare.

The D. F. Jones Material Co., of Little Rock, Ark., found that a turbocharged UDT-1091 was the right answer to a need for more power on their new Pioneer No. 45-V Duplex portable plant equipped with two crushers—a 10 x 36 jaw and a 40 x 22 twin roll type.

Production of minus ½-in. crushed limestone runs to 80-tons hourly, and as Supt. V. Whitley observes: "Our new UDT-1091 turbo engine is doing a wonderful job with power to spare. It's easy to start and produces the 200 hp continuous flow of power we need to operate the plant smoothly."

Here are some big reasons you can make profitable use of the new UDT-1091: 1) no loss of rated load hp up to 10,000-ft. altitude; 2) decreased use of low-cost No. 2 diesel fuel; 3) a full measure of dependable power; 4) super-sealed against life-robbing abrasives; 5) easy starting in any weather; and 6) simple rock-rugged 4-cycle full diesel design.

Check your nearby International Power Unit Distributor or Dealer for full details on the new UDT-1091 or on the other six dependable International diesels ranging up from 60 bhp. You'll get bonus service from the IH engine and from the man who services and sells them.

INTERNATIONAL®

International Harvester Company
180 North Michigan Ave., Chicago 1, Ill.

CONSTRUCTION EQUIPMENT

A COMPLETE POWER PACKAGE: Crawler and Wheel Tractors... Self-Propelled Scrapers... Crawler and Rubber-Tired Loaders... Off-Highway Haulers... Diesel and Carbureted Engines... Motor Trucks... Farm Tractors and Equipment.

INDUSTRY NEWS

Reveal plans for new cement plant

A NEW FIRM, to be known as Dundee Cement Co., Dundee, Mich., has been named to operate a 4,500,000 bbl. per year plant being planned for that area by a European industrial group, Holderbank Financiere, Glaris, S.A., Switzerland. A 1,400-acre plot has been acquired as the plant site, and the company is ready to go ahead with plans. Construction is scheduled for completion in the spring of 1959.

The Holderbank group operates 24 cement plants throughout the world. In 1951 it built a plant near Quebec City, Canada, and set up St. Lawrence Cement Co. to operate it. A second St. Lawrence plant, at Clarkson, Ontario, was completed this year.

From the Clarkson plant, it is expected that 1,000,000 bbl. of cement will begin shipment to the U. S. next spring, furnishing construction requirements for the Dundee plant.

Marquette reporting cited

MARQUETTE CEMENT MANUFACTURING CO., Chicago, Ill., came out ahead of the field in excellence in annual reporting, winning the Gold Oscar of Industry award. The recognition was merited by the Marquette annual report for 1956, judged best of 5,000 corporate reports by an independent board of judges in the international survey conducted annually by *Financial World* magazine. W. A. Wecker, Marquette president, was presented the award by John M. Budd, president of Great Northern Railway, last year's winner.

Pictured with the award-winning report is the Gold Oscar (front) together with a Bronze Oscar (left) for best annual report in the cement industry and a Silver Oscar (right) for best annual report issued by a manufacturing company. The first company ever to have received the Gold Oscar a second time (first receiving it in 1948), Marquette also has three other silver trophies and 13 bronze ones.

Replaces crusher operation with electric setup

LEE CRAWFORD QUARRY CO., Cedar Rapids, Iowa, has a new all-electric plant which is controlled from this main feeder operation. The entire operation, producing 265 tons of ¾-in. stone per hour, is handled by one man from this position. The main unit is a Universal 36x45-in. impact primary crusher, which reduces stone to minus 2-in. Moved by conveyor to a vibratory screen, oversize stone is recirculated. Agricultural lime and small sizes are sorted into separate bins under the screens. Chip rock production requires that the ¾-in. stone be directed through a roll crusher. New International Harvester Payhauler trucks travel the route from quarry to crusher, depositing their entire loads clean into the hopper.

Mine new barite vein

P. & R. BARIUM CO., Gaffney, S. C., began open-pit barite mining recently, taking out about 200 tons daily. Its goal is to produce 5,000 tons of barite monthly. A beneficiating plant removes barium sulphate from the feed ore. Facilities include a crusher house, flotation house, drainage bins and a dryer house.

Gypsum plant plans approved

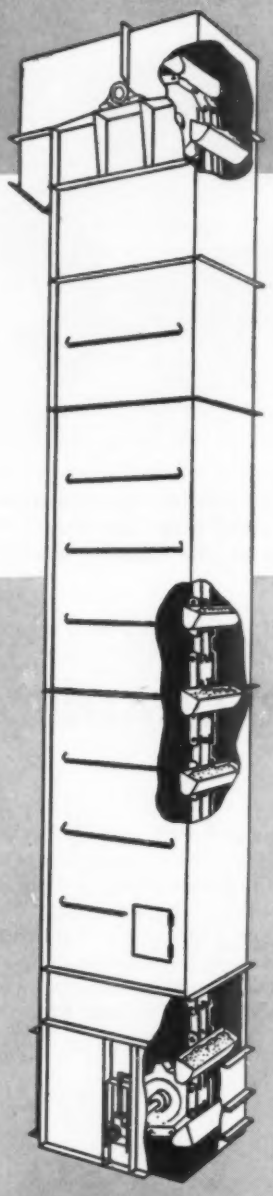
U. S. GYPSUM CO., Chicago, Ill., will erect a plant in Galena Park, Texas, near Houston, for production of sheet rock gypsum wallboard, rock lathe, plaster base, plaster and gypsum sheathing. The plant will be located next to a paper plant the company opened in 1956.

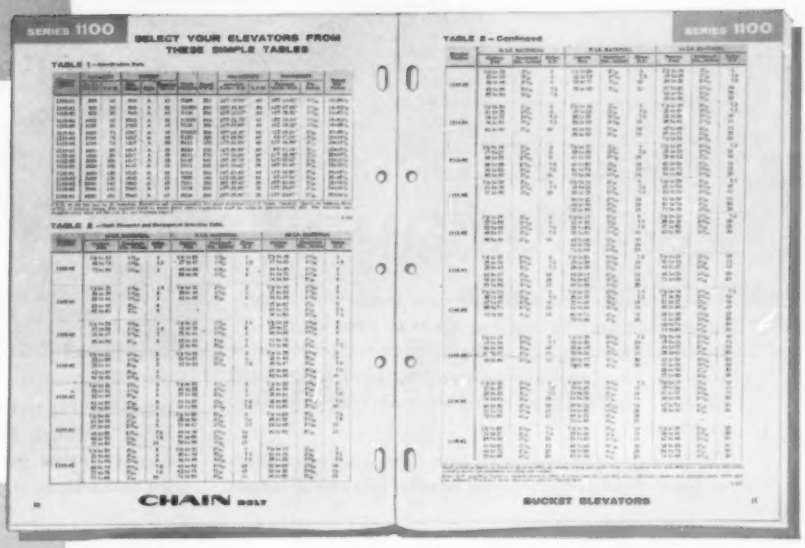
C. H. Shaver, chairman of the board, said that the new plant will produce enough building materials to finish walls and ceilings of more than 40,000 homes annually.

(Continued on page 51)

NOW

SELECT YOUR ELEVATORS FROM SIMPLE TABLES





THE PLUS VALUES IN...

REX® RATED ELEVATORS

Here's the greatest forward step ever made in standard industrial bucket elevators... the Rex Rated Elevator Line. You get economy ...dependability... efficiency... PLUS easy, simple selection.

Because the Rex Rated Line is engineered and rated for plus performance... made to standard, high-quality design... you're assured, *in advance*, of maximum economy in equipment, erection and operating costs. These elevators are completely self-supporting... require no expensive or elaborate supports. Actually, simple sway-bracing is all that's required.

You select these elevators from simple tables. No complicated, tedious selection procedures. There's a style and size of elevator to exactly fit your individual requirements. All components are balanced in strength, life and performance... not just an unrelated series of parts. You get the *plus* values that eliminate premature failures and breakdowns... change *down* time to *work* time.

For the complete facts, including selection tables, send for your copy of Bulletin No. 5784.

CHAIN BELT

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TURN PAGE

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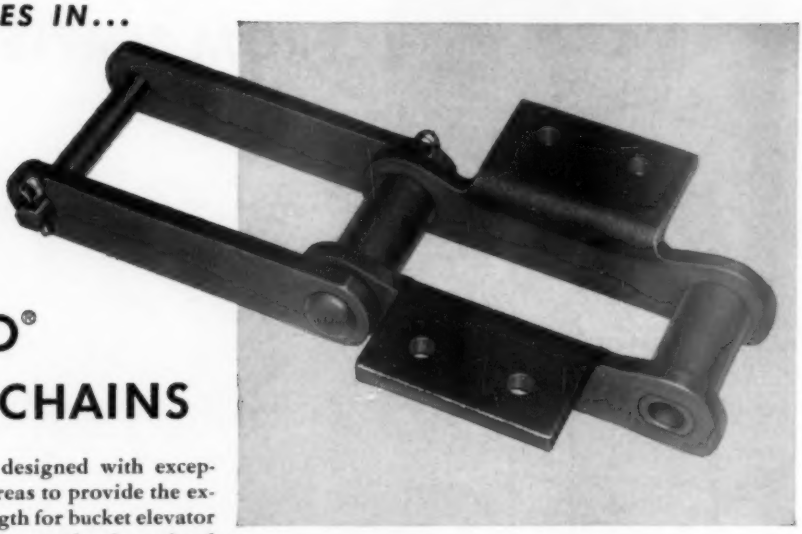
CHANGE ELEVATOR LOST TIME TO

THE PLUS VALUES IN...

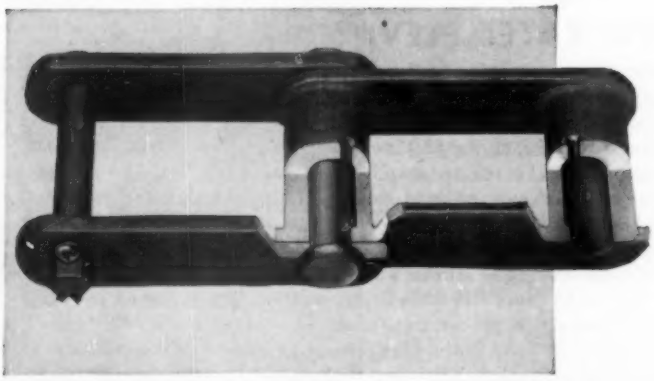


REX CHABELCO® ELEVATOR CHAINS

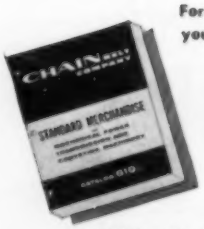
These chains are specially designed with exceptionally large live bearing areas to provide the extra long life and fatigue strength for bucket elevator service. They're made to *wear out* after long, hard service...not *break* and cause expensive production hold-ups.

The extra strength built into these chains enables them to handle more fully loaded buckets...larger buckets...assuring maximum elevator capacity. High strength is combined with light weight to assure lowest power costs...no excessive loading on transmission parts.

THE PLUS VALUES IN...REX DUROBAR® CHAINS



For the slower-speed, lower-capacity bucket elevators, Rex Durobar Chains assure low-cost, long-life service. The normal destructive grinding action between sprocket and chain that causes rapid wear on both chain and sprocket is reduced by the unique Durobar construction that has an eccentric barrel on the block links. You get many more cycles of wear life...increase productive capacity.



For complete data on Rex Elevator Chains, send for your copy of Catalog No. 610.

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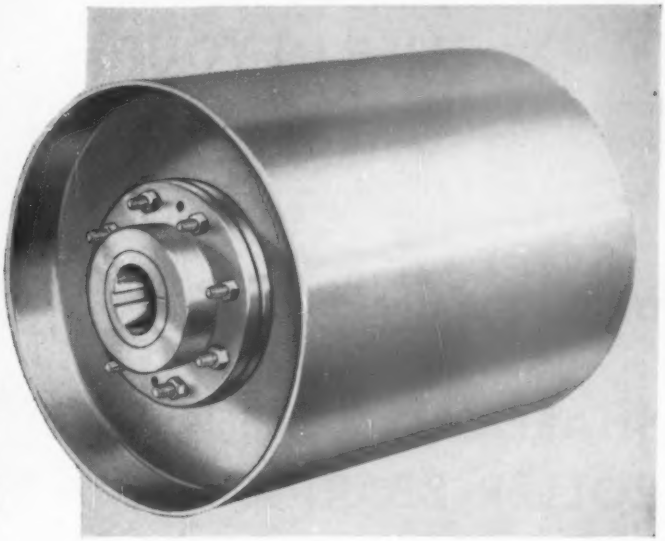
PRODUCTION TIME WITH...

THE PLUS VALUES IN...

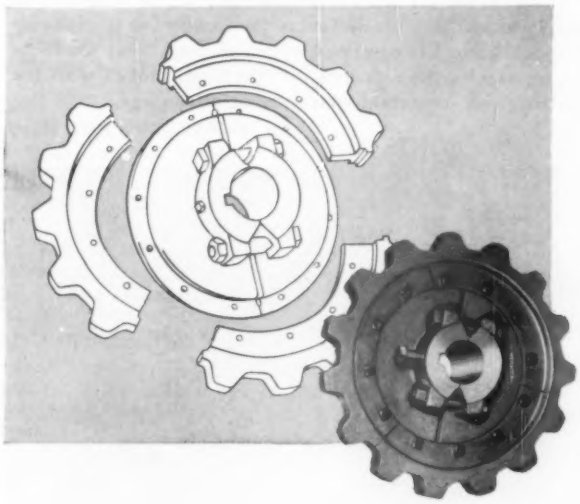
REX WELDED STEEL PULLEYS



For smooth, economical operation in belt-type elevators or conveyors, your best choice is Rex Welded Steel Pulleys. Welded construction assures a pulley that is rugged and concentric.

Full-welded construction prevents entry of dirt and moisture...prevents corrosion and premature wear. Pulley faces are accurately crowned to assure proper belt alignment.

Elevator pulleys are available in both single- and double-hub construction. Rex-Tite Hubs, which assure easy assembly and disassembly, compress onto the shaft with the grip of a shrink-fit. Taper-Lock hubs are also available.



THE PLUS VALUES IN...

REX SEGMENTAL RIM SPROCKETS

Rex Segmental Rim Sprockets and Traction Wheels provide the quick answer to sustained production. They practically eliminate installation costs and down time! Tough, long-lasting, specially hardened cast steel rims simply bolt to either split or solid hub body. If replacement is necessary, all you do is remove the worn rim...hub body remains on the shaft. No need to remove shafts or bearings...you're back in production in a hurry. And sprocket rims are machined on both sides so they can be reversed to provide double life.

The rugged design and construction of these sprockets and wheels...easy replacement...and double-life teeth...assure you of long, low-cost, plus value service even under the toughest operating conditions. The increased production alone will pay for these sprockets and wheels in a short time.

For complete information on Rex Welded Steel Pulleys, Segmental Sprockets and Traction Wheels, write for your copy of Bulletin No. 610.

TURN PAGE

CHAIN BELT

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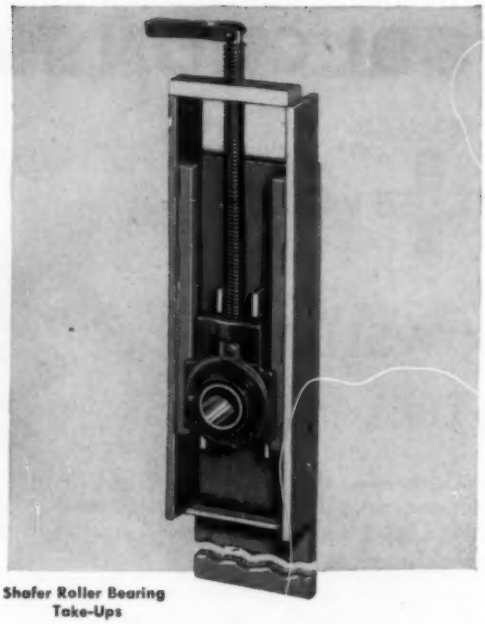
PUT MORE LIFE IN YOUR ELEVATORS WITH

THE PLUS VALUES IN...

SHAFER® ROLLER BEARINGS



Shafer Roller Bearing Take-Ups

Shafer Roller Bearing Pillow Block

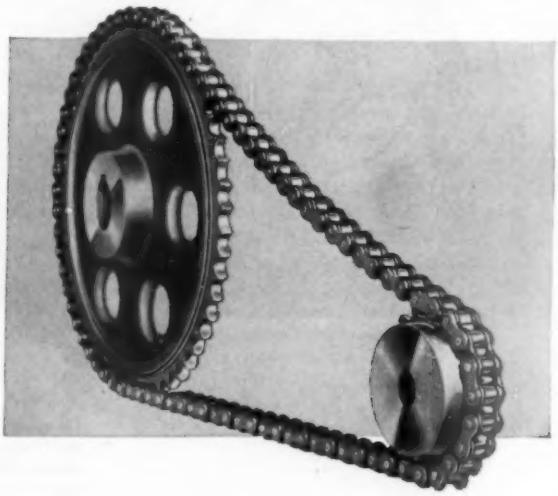
For maximum capacity under heavy loads...designed-in integral self-alignment. Shafer Roller Bearing Take-Ups are unequaled. The bearing itself is the famous Shafer design... combines the low rolling friction of a ball with the high load-carrying capacity of a roller. It provides for 3° of total misalignment...compensates for shaft deflection and misalignments.

The welded steel frame of the take-up is bolted to guides in the elevator...provides effective protection for the take-up screws. The screw, equipped with a pivoted lever for locking against turning caused by vibration, moves with the bearing...an important space-saving advantage.

THE PLUS VALUES IN...

REX ROLLER CHAINS

For elevator drives, Rex Roller Chains provide the *plus* quality that assures smooth, dependable power transmission. All pin link holes have designed-in beneficial stresses that assure maximum fatigue strength. Bushing seams are properly positioned so that the impact loads are distributed over the full bearing area of the bushing. Oil slots in the bushings assure complete penetration of lubricant to all working parts. These and many other *plus* features add the extra fatigue strength and wear life to Rex Roller Chains.



For complete information on Shafer Bearings, write for Bulletin No. 55...for data on Rex Roller Chains, send for Bulletin No. 2201.

CHAIN BELT

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INDUSTRY NEWS

(Continued from page 46)

Automated handling

AN EXAMPLE of fully automated material handling is to be found in this aggregate plant operated near Williamsport, Md. by Fry Coal & Stone Co., Mercersburg, Pa. In its latest expansion, the company included two BCPC-600 Blaw-Knox divided cement bins with 1200-bbl. capacity. Storage is provided for different materials in four 300-bbl. compartments.

Limestone is conveyed to the hopper at left and runs through two Kent mills at the base of the elevator, which takes it to the Cedarapids screen. Finished material then is brought to the top of the bins, where it is aerated to keep it from packing too solidly as it is dumped. Aeration is provided by a compressor at the bottom of the bins.

Mica mine underway

THE FARM OF IRVIN ALLEN near Grover, N. C., has become the site of a mica mining operation since discovery of the deposit by Irvin Allen, Jr. With six workers employed in the initial operation, the Allens expect to mine 15 to 25 tons per day.

Installed by Irvin Allen, Jr., were the tumble screens, a classifier, rod mill, roll crusher and water lines. Several pieces of earthmoving equipment are used in stripping off topsoil.

New incorporations

MID-STATE SAND AND GRAVEL CO., INC., Alexandria, La., has been granted a charter to deal in sand, gravel, stone and building materials. Authorized capitalization of $100,000 was announced.

AMERICAN SAND CO., Tulsa, Okla., has been incorporated by J. Alan Gibson, Bonnie J. Gibson and J. L. Morehead, all of Tulsa. Capital stock was listed at $25,000.

(Continued on following page)

INDUSTRY NEWS

(Continued from preceding page)

Expansion plans include gypsum plant

BESTWALL GYPSUM CO., Ardmore, Pa., has announced plans for a gypsum products plant at Savannah, Ga., which, according to Rawson G. Lizars, president, "represents the start of an expansion program which will include several more production facilities on the East Coast of the United States and the opening of gypsum ore deposits in Canada."

The plant will employ about 250, and produce each year in excess of 250,000,000 sq. ft. of gypsum board and lath, as well as plaster. Construction is scheduled to begin soon, with completion late in 1959.

Break ground for Arkansas plant

ARKANSAS CEMENT CORP., Shreveport, La., broke ground November 30, 1957, in Foreman, Ark., signaling start of construction of its new $12-15 million cement plant. Designers and builders are Kaiser Engineers of Oakland, Calif., and initial production is expected by next October 1. The plant is designed to produce 1,400,000 bbl. of cement per year. Known deposits of raw materials are sufficient for 200 years' operation.

Lime stabilization up

NATIONAL LIME ASSOCIATION, Washington 5, D.C., points out an increase in lime stabilization of roads. Shipments for 1957 were about 160,000 tons, about double 1956, and should reach about 250,000 tons this year, based on projected road contracts. The Texas Interstate Freeway will consume about 24,000 tons of lime hydrate. The first lime road in Ohio is one recently completed near Newark, 5½ miles in length.

Lone Star decides to hold price line

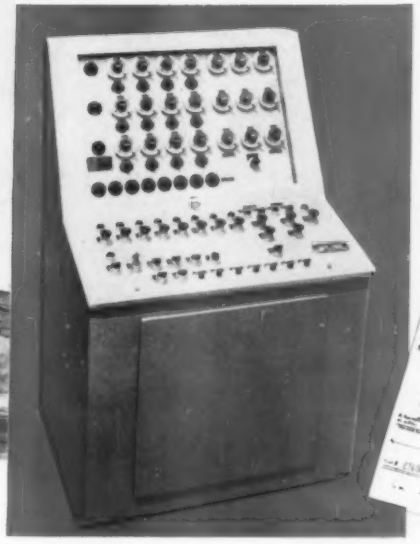
LONE STAR CEMENT CORP., New York, N.Y., through its president, H. A. Sawyer, has announced a decision not to increase prices on its products except to reflect factors not involved in manufacturing costs such as taxes, freight, etc.

Mr. Sawyer declared that labor, government and management have a patriotic duty to try to stem "the galloping inflation that is making a mockery of every worker's paycheck and indeed, every investor's dollar."

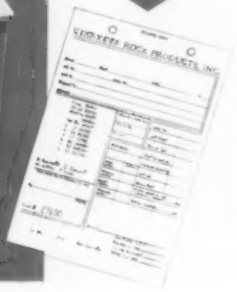
(Continued on page 54)

AUTOMATIC CONCRETE?

Sure, Concrete goes automatic with HARDY automatic Batching Control Equipment. Hardymatic makes possible more accurate quality control... greater efficiency... higher profits!



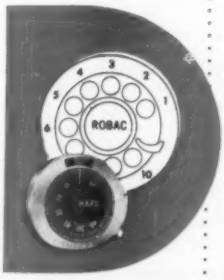
NOW! Weigh ticket Printer... Remote-controlled electronically, gives you permanent multiple printed records for customer and office use.



In batching concrete materials, as in batching virtually all types of rock products, HARDYMATIC Batch Control Equipment can help you build profits by improving the efficiency of your operation... and by controlling the quality of your products.

No bulk weighing problem or batching specification is without solution when you choose the electronic magic of HARDY equipment. Let Hardy engineers recommend the right unit to give you greater versatility, more accuracy, and easier maintenance... for higher profits.

Visit our display at the NSGA Convention in Chicago, February 10-13, 1958. See ROBAC, the amazing, new, automatic control...



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Dept. RP-1, 5701 Atlantic Blvd., Maywood, California
Please send full information on Hardymatic Automatic Batching Systems and Remote-controlled Electronic Printers.

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COMPANY _____

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INDUSTRY NEWS

(Continued from page 52)

Mining symposium

THE UNIVERSITY OF MINNESOTA, through its Center for Continuation Study, announces the 19th Annual Mining Symposium to be held Tuesday and Wednesday, January 14-15, at the Norshore Theater in Duluth. As in previous years, the symposium will be held in conjunction with the annual meeting of the Mining Section of the American Institute of Mining, Metallurgical and Petroleum Engineers. The AIME will meet Monday, January 13.

Included in the 1958 symposium program are such subjects as: (1) Handling of Intermediate Ores—the two aspects of the subject which panels will discuss are scrubbing and screening; (2) Design and Operation of Surge Pits and Surge Bins; (3) Stockpiles and Handling of Concentrates; (4) Design and Preparation on Tailing Ponds; and (5) Subjects dealing with open pit operations.

Sales office is moved

ALPHA PORTLAND CEMENT CO., Easton, Pa., has moved its Washington, D.C., sales office from the Southern Building in downtown Washington to larger quarters in the Perpetual Building, 7401 Wisconsin Ave., Bethesda 14, Md.

The move has been made in anticipation of expansion of the Washington sales operation when a new plant now under construction at Lime Kiln, Md., goes into production next summer. The new plant is being built to serve an area including the District of Columbia, Maryland, Delaware and parts of Virginia, West Virginia and Pennsylvania. It will have an estimated output of 2,000,000 bbl. of cement per year. R. E. Brown will continue to head the Washington sales operation.

Revise water treatment text

NATIONAL LIME ASSOCIATION, Washington 5, D.C., has published the eighth revised and enlarged edition of its "Water Supply and Treatment" book. It may be obtained from the association at $2 per copy, plus 12¢ postage. The 221-page edition is named for Charles P. Hoover, author of the first seven editions, who died in 1951. The new author is Merrill L. Riehl, superintendent of purification and chief chemist of the Mahoning Valley Sanitary District, Youngstown, Ohio.

(Continued on page 56)

GRAVITY-DUMP eliminates slow-acting body-hoists

There are no complicated mechanical body-hoists to slow up haul cycles — no expensive hoist replacement parts, maintenance or costly hoist down-time when you haul with Koehring Dumptor. *It has no body-hoist.* Operator trips the body-release lever, and *gravity* tilts the 6-yard body, dumps load instantly.

You get this one-second dumping action *every time,* under heaviest loads, in all temperature extremes, because *gravity-dump* never balks, never wears out. You gain an important production advantage, too. Saving 15 to 25 seconds on every dump adds up to a substantial increase in extra yards hauled per hour. For example —

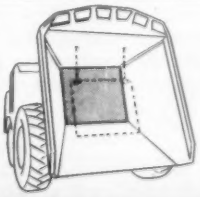
Increases output 9%

Take a typical 1,000-foot haul, where an ordinary dump truck would make 16 trips an hour. Allowing the same time to load, haul and return, Koehring Dumptor would average 17½ trips on the same cycle. That's because one-second dumping saves an average of 20 seconds dump-time on each trip — gains a total of 5.3 minutes more productive haul-time per hour. This is typical of Koehring Dumptor's basic principle — to reduce non-productive time to a minimum — and increase *work-time* for more yards per day.

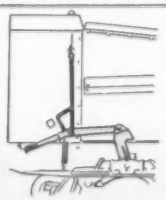
What's more, Dumptor *no-turn shuttle hauling* cuts another 15 to 30 seconds off cycle time. It operates at same speeds in either direction, travels round trip without turning. Call Koehring distributor *now.*

KOEHRING
DIVISION OF KOEHRING COMPANY
Milwaukee 16, Wisconsin

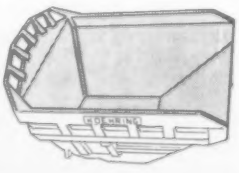
KB11



When dumping sticky materials, free-swinging kick-out pan breaks load suction. Pan bolts to floor, gives extra protection when loading rock.



Body latch for gravity-dump is simple and trouble-free. It's engaged by a single hook mounted on chassis. Handy dump lever is inside cab.



There are no bulges or ledges inside the streamlined, all-steel body. Top edge is box beam construction — sides and ends are rib-reinforced.

KOEHRING® *heavy-duty* DUMPTOR®

Other Koehring products: EXCAVATORS • CRANES • twinbatch® PAVERS • LONGITUDINAL FINISHERS • MUD JACKS®

Enter 1405 on Reader Card

INDUSTRY NEWS

(Continued from page 54)

Foundations laid for cement plant

MISSISSIPPI VALLEY PORTLAND CEMENT CO., Vicksburg, Miss., began construction this fall on its $3.7 million cement plant near Redwood, Miss. All crushing, grinding, screening, conveying, classifying and bagging equipment and rotary kilns are being supplied by Kennedy-Van Saun Manufacturing and Engineering Corp., Danville, Pa. The plant, which will have an annual capacity of 680,000 bbl. of cement, is scheduled for opening next spring.

Attending ceremonies marking the inauguration of construction were R. W. Hyde, Jr., Jackson, Miss., president; Kent B. Diehl, Sr., Orange, Texas, supervising and coordinating engineer; and engineers of the Kennedy-Van Saun organization.

Other officers of the company are Cecil F. Travis, vice president; James E. Fowler, secretary; James W. Sanders, treasurer; A. N. Morgan, controller, all of Jackson; and Robert L. Dent, general counsel, Vicksburg.

Sets up portable plant

SPRINGFIELD CRUSHED STONE CO., Springfield, Ohio, began existence as a portable crushed limestone plant. Partners in the venture are Carl and Walter Rockhold, Urbana, Ohio, and E. F. Patton of Independence, Iowa. The plant was set up on the site of the old Miami Stone Co. about three miles southwest of Springfield.

Equipment is valued at $200,000. and capacity has been estimated at 1,500 tons per day. Crushed stone of all types will be produced, with agricultural limestone production scheduled to begin early this year.

Holds open house

BESSEMER LIMESTONE & CEMENT CO., Youngstown, Ohio, celebrated the completion of its $5½ million expansion plan with an open house that ran four days. Nearly 2,000 employes and visitors were shown the giant walking dragline with a 12-cu. yd. bucket, the 450-ft. long rotary kiln and other pieces of equipment. The additions enable the company to produce 3,000,000 bbl. of cement a year.

•

MARTINSVILLE STONE CORP., Roanoke, Va., will engage in mining operations. It was capitalized at $100,000 by J. O. Gardner, agent.

(Continued on page 58)

LOADS 2 CU. YDS. PER PASS

quicker...easier... at less cost per yd.

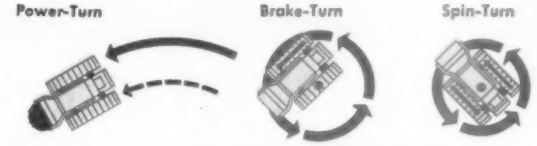
For big yardage production, no other crawler in its class can match the combination of power, speed and maneuverability you get with the new *2 cu. yd.* Case® TerraTrac® Model 1000 tractor-shovel. It not only gets bigger loads faster . . . it also turns and maneuvers faster with a new *COUNTER-ROTATING* Terramatic transmission that drives one track *forward* and the other track *reverse* at the same time.

Exclusive "Knock-out" dumping action cleans bucket instantly of stickiest material, while extra-high (9'6") clearance lets you back away from big trucks or hoppers without stopping to raise bucket. You also get *exclusive torsion-bar track suspension, automatic track roller lubrication,* PLUS many other advanced features that will increase your production, cut your costs.

See this revolutionary higher-speed 2 cu. yd. rig now at your Case Industrial Dealer's, or mail coupon for catalog and free eye-opening demonstration.

100 HP Diesel plus torque-converter drive

Develops up to 24,000 lbs. of "crowding-power" for digging hard materials. Converter automatically balances tractor speed to changing loads . . . eliminates clutching and gear-shift guesswork . . . keeps engine and hydraulic pump operating with maximum power at all times.



Instant power-shift with 3-way power-steer

Enables you to change speeds or directions "on-the-go", without stopping to shift gears. Easy-working hydraulic controls let you turn and maneuver full loads easier — with power and traction on both tracks.

CASE INDUSTRIAL

1st in quality for over 100 years

Clip . . . mail for free catalog

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☐ Send catalog on new 2 cu. yd. tractor-shovel

☐ I'd like a free demonstration on my job

Name ..... Position .....

Company .....

Address .....

City ..... State .....

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Industrial Wheel and Crawler Tractors • Loaders • Dozers • Backhoes • Engines

INDUSTRY NEWS

(Continued from page 56)

Many construction projects make up St. Lawrence Seaway

IN A SPECIAL SUPPLEMENT prepared for its Sunday edition August 4, *The Milwaukee Journal* published a photographic study on construction progress of the St. Lawrence Seaway. Dramatic in its pictorial presentation, the report underscored the vastness of the project by linking together hundreds of separate construction projects which go together to make up the undertaking.

Some of the facts brought out in the study: Canada is standing twice the United States' building cost of the Seaway—$285 million against $140 million. Canada is building five of the seven locks, deepening the Welland canal, modifying seven major bridges, excavating 25 of the 37 miles of canals and dredging 60 of the 71 miles of underwater channelling.

Most of the U.S. share of the Seaway cost is being centered in the 10-mile International Rapids section of the St. Lawrence River, where the St. Lawrence Seaway Development Corp., a Federal agency, and the U.S. Army Corps of Engineers are building the Long Sault canal and Dwight D. Eisenhower and Grasse River locks.

Decides upon location for plant

ARIZONA PORTLAND CEMENT CO., Los Angeles, Cal., has decided to build a new cement plant at Ash Fork, Ariz., rather than enlarge its Rillito plant. Plans for the new two-kiln installation are being prepared by Donald R. Warren Engineering Co., Los Angeles.

In announcing the decision, Ernest Duque, president of Arizona Portland Cement Co., said that the $12 million plant, with capacity of 2,000,000 bbl., may be ready for operation in the spring of 1959.

Canada to get new cement plant

IMPERIAL CEMENT LTD., Edmonton, Alberta, Canada, is completing financing for its proposed $12 million plant to be erected near Acheson. The one-kiln operation would have a 700-ton daily capacity. George H. Morrow is president of the new company which has acquired exploration rights and leases on 5,000 acres and has retained Sumner Sollitt Co., Chicago, Ill., to prepare plans for the construction of the plant.

(Continued on page 62)

Barber-Greene Idlers provide extra years of low cost operation . . . the ultimate in belt protection.

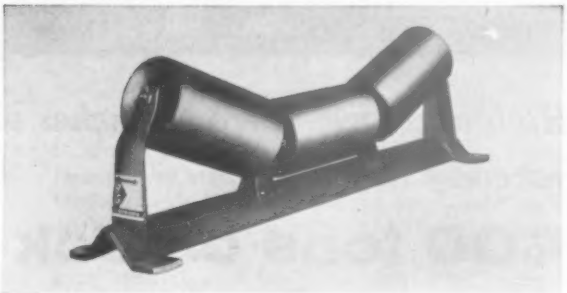
Barber-Greene Idlers . . . still rolling after twenty years

Installed 20 years ago, Barber-Greene Idlers are still rolling at this Material Service Corporation plant in Chicago.

There are no secrets behind the long-life records established by Barber-Greene Idlers. Advanced design plus top-quality materials, plus precision manufacture with the most modern production machines make the difference. The user benefits in lower maintenance costs, less down time, and longer idler life.

Barber-Greene advantages include virtually unbreakable jig-welded base frames, self-shedding base angles, interchangeable rolls made of heavy steel tubing, seamless steel grease reservoirs of ample capacity, and two-degree tilt to facilitate belt alignment.

Whether it's a ball bearing unit for normal service, or a roller bearing unit for the most rugged conditions, Barber-Greene has the idler that's right for any conveyor . . . right for any job.



Available in widths from 16" to 60", with 4", 5", or 6" rolls, the Barber-Greene line includes standard troughing carriers and return rolls, flat belt and picking table carriers, self-aligning carriers and return rolls, grain idlers, rubber impact carriers, and self-cleaning return rolls.

56-22-IPE

Write for literature on the complete Barber-Greene idler line.

Barber-Greene BG

AURORA, ILLINOIS, U.S.A.

CONVEYORS . . . LOADERS . . . DITCHERS . . . ASPHALT PAVING EQUIPMENT

Enter 1501 on Reader Card

High altitudes, narrow benches severely test this Michigan, yet every day it loads

400 tons of rock weighing 5,400 lbs per cubic yard

Up in the scenic Sapphire Mountains of southwestern Montana, Cummings-Roberts Company has one of the toughest rock-loading jobs you could find anywhere.

Part of the time, they blast and load coarse mountain-top granite . . . summer and early fall, they load fluorspar. No one needs to detail what a severe test the heavy, rough granite overburden gives to *any* loader. Fluorspar, however, is even worse. A heavy rock mineral, it weighs 5,400 pounds per cubic yard—over 850 lbs more per yard than in-bank granite (and 2,200 lbs more than pit-run gravel).

Proved by demonstration

Over the years, Cummings-Roberts has tried just about every kind of loader made. Last year to increase efficiency, their Michigan distributor, Miller Machinery Co., Missoula, suggested a Model 175A Michigan Tractor Shovel. "Frankly," Cummings-Roberts officials told them, "we don't believe *any* rubber-tire unit can load the stuff, much less do the work day in and day out. But we'll give it a try."

Result? John Taber, General Superintendent, wouldn't let them take the Michigan off the job.

Heaped loading assures proper blending

Today, the 133 hp 2¾ yard Michigan handles *all* loading of the super-heavy fluorspar. Production, with trucks on 600 ft one-way hauls to crushing mill, averages 400 tons per 7-hour day. The fluorspar, incidentally, varies considerably in grade from place to place through-

out the mine. It must be blended to give the grade desired for shipment . . . and this assignment goes to the Michigan, too. Its 27 mph mobility is a vital asset on this scattered loading; trucks never wait more than a few minutes for loading service.

Strips granite overburden — 500 tons per day!

In late autumn and sometimes in spring, the Michigan strips the granite overburden. Output averages *500 tons* per 7-hour day.

Downtime negligible

With all this rugged loading of super-heavy material, plus repeated back-and-forth maneuvering on narrow benches, plus continuous work at high 6,800 to 7,000 ft altitudes, the torque converter equipped Michigan has posted an excellent mechanical record. *To date, it has had only one minor breakdown!*

Also tows compressors, speeds other odd jobs

Operator Don Lindblom likes Michigan's powershift transmission, says its bucket action is the best he's ever worked with. "You can tip it back and fill it easily," he says. "I like the fact also that it takes only half-an-hour per day to refuel and lubricate." Foreman Waino Lindblom adds, "The Michigan has done a nice job for us! We particularly like its truck-like speed in moving from bench to bench." This mobility gives the Michigan some "spare time" to handle maintenance jobs scattered along 15 mi of mountain roads—cleaning rock rubble off benches so trucks and wagon drills can get through . . . hauling air compressors . . . digging culverts . . . even plowing snow.

Got a tougher job than this?

There *may* be a tougher materials-handling job than loading granite and fluorspar . . . but we're willing to bet a Michigan Tractor Shovel can do it faster, better, at lower cost than any other machine. To prove it, your Michigan Distributor will be glad to arrange a demonstration at *your* convenience. *You pick the jobs.*

CLARK® EQUIPMENT

Michigan is a registered trade-mark of
CLARK EQUIPMENT COMPANY
Construction Machinery Division
2481 Pipestone Road
Benton Harbor 33, Michigan
In Canada: Canadian Clark, Ltd.
St. Thomas, Ontario

INDUSTRY NEWS

(Continued from page 58)

Bauxite concession granted by Panama

KAISER ALUMINUM & CHEMICAL CORP., Oakland, Calif., has obtained a bauxite exploration and mining concession from the government of Panama. The contract, which is the first bauxite concession ever granted by the Panamanian government, gives the Kaiser Exploration Co., a wholly owned subsidiary of Kaiser Aluminum, exclusive exploration and mining rights in a large area of western Panama near the Costa Rican border.

According to D. A. Rhoades, vice president and general manager of the company, "Preliminary studies indicate that deposits are extensive and it is possible that Panama will become a major source of the primary ore used for the production of aluminum."

Tax refund ruled on quarry depletion

WAGNER QUARRIES CO., Sandusky, Ohio, is entitled to a $106,600 judgment against the United States with interest at six percent from February 8, 1955, for overpayment of Federal income and excess profits taxes, according to a ruling by U. S. District Judge Frank L. Kloeb.

The case involved percentage depletion under the Internal Revenue Code of 1939, which was amended by Congress in 1951. Under that code, Wagner Co. deducted depletion at the rate of 15 percent from gross sales of all limestone from its quarry for the year 1951.

Part of this deduction was disallowed by the commissioner of internal revenue. Instead, he allowed depletion at the rate of five percent on sales for highway construction, concrete aggregates and railroad track ballast, and ten percent on sales of agricultural limestone. The deficiency assessed amounted to $106,600.

In the suit which followed, the Government contended that "end use" of the limestone by the purchaser determined the rate of depletion. Judge Kloeb, however, held that the statute established a "grade" test rather than an "end use" test, and that the regulation was contrary to the statute, illegal and void.

The court further found that the statute provided a 15-percent rate of depletion for chemical and metallurgical grade limestone, and that all of the Wagner quarry's limestone sold in 1951 was suitable for such uses.

(Continued on page 65)

Why Wyandotte Chemical Corp. chose this dozer *(a Michigan)*

"Like most quarries, we have a lot of widely-scattered, repetitive jobs to do," writes William Hagen, veteran manager of Wyandotte's big Alpena, Michigan, limestone quarry. "Trouble was, our crawler-dozers just couldn't handle 'em efficiently—moving, as they must over rocky surfaces, at only a couple of miles per hour. And the cost of track maintenance was pretty awful. Major cause of track wear is travel, of course . . . so we tried to limit *both* as much as possible by putting a crawler on each operating level and another on the stockpiles. Didn't help much, though. Breakdowns would still upset our schedules *several days per week.* So we decided to look at some rubber-tire dozers." They tried one type. It was unsatisfactory. Then Wyandotte's local Michigan Distributor, Michigan Machinery & Equipment Co., arranged an on-the-job demonstration.

Makes hour crawler move in 7 minutes

"From the moment our trial Michigan drove off the flatcar, it was *busy,*" Hagen continues. "First job on the docket was leveling a dump area on our macadam storage pile. The Model 180 dozed enough area to last an 8-hour shift —in only 28 minutes! Then, because *two* of our crawlers were down for repairs that day, we drove the Michigan a mile to our shovel loading area. *In less than 4 minutes* it was at work, cleaning up ahead of the 6 yard electric shovel and opening the way for trucks. Half an hour later, we moved back to macadam storage —a 3-minute trip this time. One of our crawlers would have taken a whole hour for the 2 mile round trip alone! Later, the Michigan assisted in moving our big quarry shovel; transfer of the power feed cable and area cleanup were handled faster than ever before. We also used the Model 180 Dozer to move drilling machines, air compressors and shanties . . . to strip shallow overburden . . . clean around the surge bin . . . maintain roads . . . and to level the flux stone stockpile. Nowhere in these operations did the Michigan have a bit of trouble. With performance like *this,* we were sold!"

Only 1 repair job in 5,800 hours

Hagen finds their Michigan today does all of these tasks and many more around this 450-acre quarry. The Model 180 actually works 16 hours a day, 7 days per week. Quarry Superintendent B. C. Raymond estimates its tire wear to be *1/6 as costly* as track maintenance on the crawlers. Its mechanical efficiency has been excellent . . . in the past year, it has been down for repairs *only once.* Operators say "Michigan drives like a new car . . . avoids constant jarring of a crawler . . . gets us on the spot *fast* . . . has fine visibility fore and aft. *We like it!*"

Want to move in on bottlenecks too?

We'll bet a Michigan Dozer can break production bottlenecks for *you,* too. Won't cost you a cent to find out—your local Michigan Distributor will be glad to arrange a thorough demonstration. You pick the time. You pick the job. No obligation, of course. And ask him about the popular Clark Lease-Purchase Plan, which lets you put a Michigan to work without investing a penny of capital. Other finance plans available—choose the one you like best!

Michigan is a registered trademark of

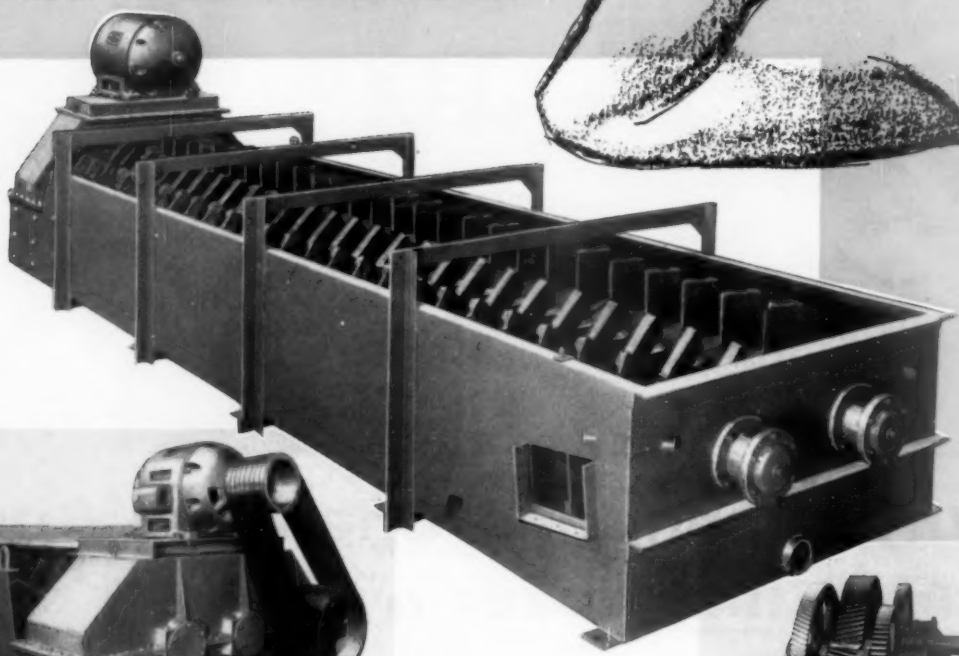
CLARK EQUIPMENT COMPANY
Construction Machinery Division
2481 Pipestone Road,
Benton Harbor 35, Michigan

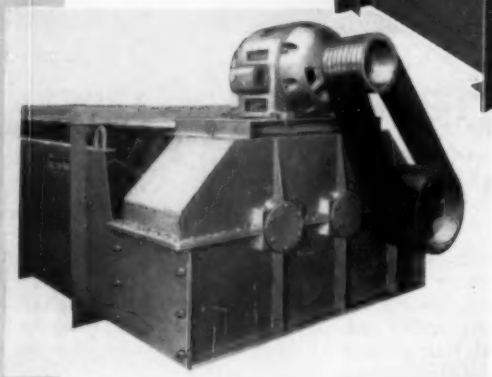
In Canada: Canadian Clark, Ltd.,
St. Thomas, Ontario

CLARK® EQUIPMENT

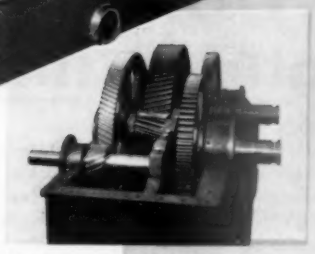
ALL MUSCLE—NO FAT

IN THIS BIG EAGLE LOG WASHER!



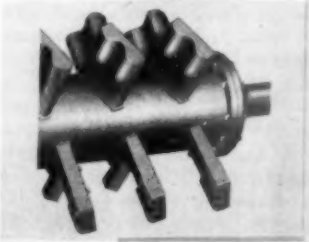


Compound gear drive is sealed against dirt and moisture; runs in oil bath.



Massive compound gear drive assures economical operation.

Every pound of metal that goes into this big Eagle Log Washer has one purpose—to produce cleaner material at greater capacity and make money for its owner. From tip to tip of opposing paddles each log is 36" in dia. Unit will readily handle crushed rock, stone or ore up to 4" dia. Renewable paddle shoes are of wear resistant Ni-Hard chromium-nickel iron alloy. New massive compound gear drive assures smooth operation under severest conditions with minimum power. Hydrotex marine type bearings at lower or tub end are water-lubricated under pressure, eliminating bearing problems. Material is abraded and scrubbed as it is cascaded over and over and comes out sparkling clean—80 to 125 tons per hour. Muscle produces profits for you and there's no fat in this big Eagle. Ask for information.



Non-deflecting tubular steel log shaft is flanged and is supported by stub shafts at both ends—can be readily lifted out.

SINCE 1872

EIW

EAGLE IRON WORKS

Experience, Progress, Service Since 1872

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137 HOLCOMB AVE., DES MOINES, IOWA, U.S.A.

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INDUSTRY NEWS

(Continued from page 62)

Dictionary spoofs stone industry

FROM NEW YORK TRAP ROCK CORP.'s employe-publication, *Screenings*, has been gleaned the following dictionary of words and phrases used in the stone industry. It follows the vein of a widely circulated glossary said to have been compiled by two German rocket scientists for members of their profession.

JACKHAMMER—Holengrounder mit Manschaken.
CHURN DRILL—Holengrounder mit Uppendowner Klanckenbang.
ROTARY DRILL—Holengrounder mit Growlen und Dust aus Geshooten.
PRIMARY BLAST—Laudenboomer.
SECONDARY BLAST—Krackenboomer.
POWER SHOVEL—Bustenrock Pickenupper mitout Backbreaken.
QUARRY TRUCK—Steinkarrier mitout Dribblen.
TRUCK DUMPER—Steinkarrier Tippenupper.
GYRATORY CRUSHER—Rockenkruncher mit Wobbleschmascher.
JAW CRUSHER—Rockenkruncher mit Flappenschmascher.
IMPACT CRUSHER—Rockenkruncher mit Whirlenschmascher.
PORTABLE CRUSHING PLANT—Rockenkruncher mit Gitupundgo.
PLANT SUPERINTENDENT—Werkesfuehrer mit Laudenvoice und Hairgepullen.
GENERAL SUPERINTENDENT—Grosse Werkesfuehrer mit Whipschnappen und Hairkaput.
MASTER MECHANIC—Grosse Machinungebusten mitout Umlauts.
SCOW CAPTAIN—Steinfloatmeister mit Bilgewasser Pumpen.
PURCHASING DEPARTMENT—Grossermarkgeschpender.
FINANCE DEPARTMENT—Grossermarksgepinscher.
EMPLOYE RELATIONS DEPARTMENT—Hartzundflowerz singen mit Tierzflowen.
SALES DEPARTMENT—Yakkenyakken vor Steinsellen.

Pavement yardage

AWARDS OF CONCRETE PAVEMENT for the month of October, 1957 and total awards for the first 10 months of 1957 are listed as follows by the Portland Cement Association:

	Sq. yd. awarded during	
	October	First 10 mos.
Roads	3,143,320	39,150,199
Streets and alleys	2,775,474	25,601,718
Airports	749,485	13,595,343
Total	6,668,279	78,347,260

(Continued on following page)

INDUSTRY NEWS

(Continued from preceding page)

Portland cement production

PRODUCTION OF FINISHED PORTLAND CEMENT in August, 1957, as reported to the U.S. Bureau of Mines, totaled 31,406,000 bbl., an increase of four percent over August, 1956. Mill shipments for the month totaled 35,365,000 bbl., an increase of six percent compared with August, 1956, and stocks on hand were 20,019,000 bbl., 17 percent more than on the same date a year ago. Clinker production in August, 1956, totaled 27,395,000 bbl., a decrease of three percent from the August, 1956 figure. The report was based on figures provided by 161 plants in 37 states and Puerto Rico.

(Continued on page 68)

Coming Conventions

January 20-23, 1958—
National Agricultural Limestone Institute, 13th Annual Convention, Hotel Statler, Washington, D.C.

January 24, 1958—
National Crushed Limestone Institute, 3rd Annual Convention, Hotel Statler, Washington, D.C.

January 27-30, 1958—
Plant Maintenance and Engineering Show and Conference, Palmer House, Amphitheatre, Chicago

February 10-13, 1958—
National Sand and Gravel Association, 42nd Annual Convention and Exposition, Conrad Hilton Hotel and Chicago Coliseum, Chicago, Ill.

February 10-14, 1958—
American Society for Testing Materials, Committee Week, Hotel Statler, St. Louis, Mo.

February 17-19, 1958—
National Crushed Stone Association, 41st Annual Convention, Conrad Hilton Hotel, Chicago, Ill.

March 5-6, 1958—
Iowa Agricultural Limestone Association, Inc., 13th Annual Convention, Savery Hotel, Des Moines

April 11-12, 1958—
Texas Aggregates Association, Annual Convention, Gunter Hotel, San Antonio, Texas

May 12-14, 1958—
National Lime Association, Annual Convention, Grand Hotel, Point Clear, Alabama

May 11-13, 1958—
Empire State Sand, Gravel and Ready Mix Association, Annual Meeting, Syracuse Hotel, Syracuse, New York

June 22-27, 1958—
American Society for Testing Materials, 61st Annual Meeting and Exhibit, Hotel Statler, Boston, Mass.

September 17-21, 1958—
National Sand and Gravel Association, Semi-Annual Meeting, Board of Directors, Sun Valley Lodge, Sun Valley, Idaho

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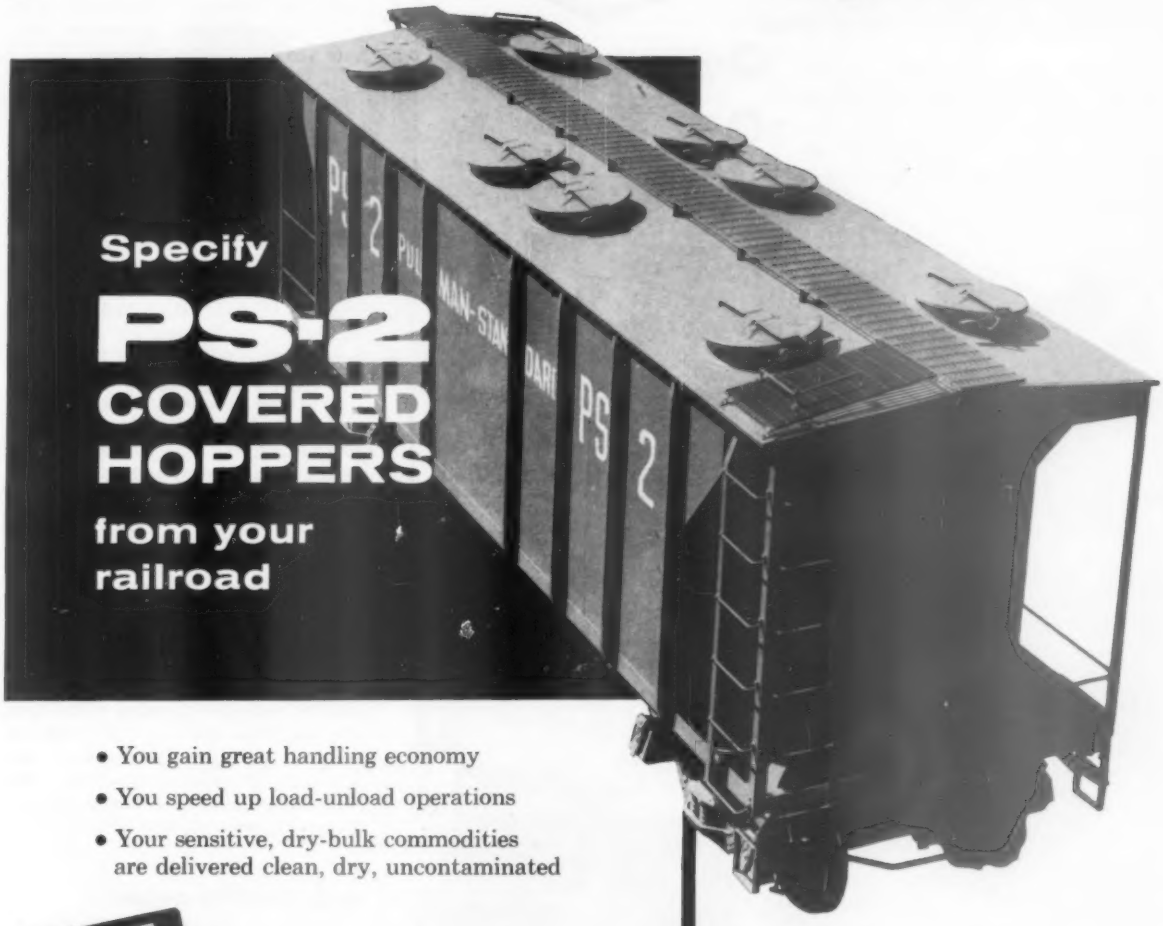

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Industrial Sand
Phosphate Rock
Salt
Sulphur

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INDUSTRY NEWS

(Continued from page 66)

Perlite deposit is being opened

THE PERLITE DEPARTMENT of the Mining and Mineral Products Division, Great Lakes Carbon Corp., Los Angeles, Calif., has opened the No Agua deposit of crude perlite in northern New Mexico. This is the first step in an extensive expansion program charted by the company.

The No Agua perlite deposit has been held as reserve by the company for nearly 10 years. It is said to be the world's largest known deposit of uniform commercial-grade perlite. A new crushing and sizing plant is being erected there, scheduled for completion in June, 1958. D. L. Marlett, vice president and general manager of the corporation's Mining and Mineral Products Division, described it as the "industry's most complete and most modern processing plant for crude perlite."

Until the new plant is ready, No Agua perlite ore will be processed at the crushing and sizing plant in Florence, Colo. Crushed and graded perlite will be marketed under the name of Nu-Alexite.

First feldspar shipment

LAWSON UNITED FELDSPAR AND MINERAL CO., Minpro, N. C., recently made its first shipment after beginning operations at the plant in June. The plant is equipped to refine 8,000 tons of glass grade feldspar, 2,500 tons of low iron and glass melting sand and 400 tons of mica per month. The froth flotation process for separating feldspar, mica and silicon is used.

Finds ilmenite deposit

AMERICAN SMELTING AND REFINING CO., New York, N.Y., has obtained options on extensive acreage covered with ilmenite titanium bearing sands near Lakehurst, N.J. The deposit is said to be of commercial grade and mining will be done by dredging operations. Bulk samples are being taken to determine the best metallurgical treatment methods.

Sells quarry site

NAPOLEON STONE QUARRY, Greensburg, Ind., has been sold to Louis and Norman Wanstrath, owners of New Point Stone Co. The new owners expect to expand production of crushed stone and agricultural limestone.

END

PETTIBONE

UNIVERSAL WOBBLER

FEEDS AND SCALPS IN ONE OPERATION

won't clog in wet, sticky material

Elliptical-shaped bars form the bed of a hopper and are set in alternate vertical and horizontal positions. Turning of the bars imparts a rocking, tumbling forward motion to the load. Fines drop through spacing between bars. Oversize is delivered off the end.

The Wobbler Feeder increases crusher capacity by removing fines ahead of the crusher. Unlike a screen, the Wobbler does not vibrate — nor clog in wet, sticky material.

This combination feeder-scalper is needed in every mining operation. Here are a few uses now being made:

IRON ORE—The Wobbler is used as a portable machine to follow a shovel in reclaiming scattered ore stockpiles. Unwanted material is separated at the pile . . . usable ore is then trucked economically to mills and concentrating plants.

BAUXITE—A large number of Wobbler Feeders are being used by one of the Aluminum companies to separate fines from oversize in this gummy material — no clogging.

SLAG—The use of a Wobbler Feeder in place of a bar grizzly has cut grizzly maintenance from two days a week to four hours a month.

LIMESTONE—The Wobbler is removing 94% of fines ½-inch and under in the cement industry — for increased hammermill capacity.

Universal's Wobbler Feeder . . . . the profit machine for aggregate producers and road builders. Available in combination with Universal portable crushing plants. Discuss with your Universal distributor.

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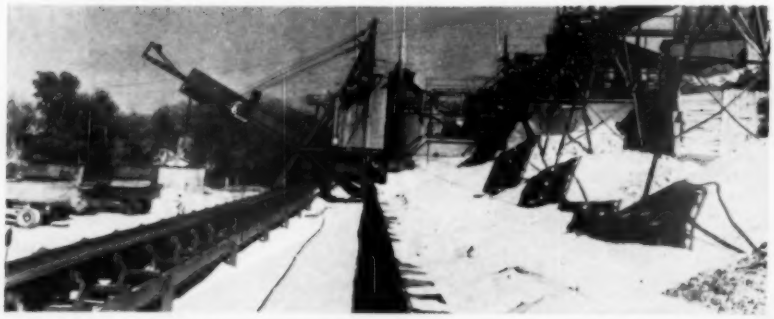
HINTS AND HELPS

Profit-making ideas developed by operating men



Ingenious reclaim system

A TRAVELING DRAWBRIDGE has proved to be a very efficient method for this western sand producer to load out several grades of sand either to trucks or to a conveyor ahead of the dryer.

When the "chute" is lowered to load trucks a drag scraper pulls sand from storage at the right, across the bridge over the conveyor and discharges into the body of the truck. Whenever the operator needs dried sand a gate in the floor of the chute discharges sand brought out by the drag scraper down to the belt conveyor.

Timber construction

AGGREGATES PRODUCERS in remote areas must improvise efficient tools and equipment to save money and still meet production deadlines.

This far western operator was skillful at using timber to frame and support his screening tower and belt conveyors. He was able to save hauling costs and was able to handle timbers more easily than steel.

A sturdy sand storage bin was made entirely of rail ties and heavy bolts. It was quick and easy to put up and will be dismantled and hauled away just as easily when the job is done.

Settling agents

MANY WASHING PLANTS in the rock products industries send wash water with waste and tailings to a settling pond or to several ponds and re-use the water many times. This is good economy where water is at a premium or where pollution laws are vigorously enforced.

There are chemicals on the market now which can be added to plant waste water to increase the settling rate of suspended materials. Sold as a dry powder, these chemicals are made up into stock solutions and drip-fed into tailing effluents. A number of plants claim considerable savings, both through more rapid recovery of clean water and by the use of fewer (or smaller) settling ponds.

Electric cable care

ELECTRIC CABLE used in the rock products industries are so tough that many operators overlook the small ways in which the cable can be damaged. A southern cement producer discovered that a small raft would keep the cable out of the mud where it might be damaged by steel, glass or grit.

The raft is nothing more than a pair of oil well casings about 10 ft. long, welded watertight and welded to steel beams which support heavy wooden planks. The whole raft is anchored to a concrete pier with enough rope to let it float clear whenever the river rises enough to flood the area.

Screen cloth care pays!

HERE'S ONE OPERATOR who realizes that even the heaviest screen cloths are precision-made parts which merit careful handling and safe storage. His front-end loader is fitted with a special fixture to carry the wire cloths without flexing or damage. Different sizes of screens are stored on yard racks near the screening towers, and the racks have been specially designed to make it easy to lift the screens from the loader to the shelf on the rack.

Identify machinery parts

SEVERAL MAINTENANCE FOREMEN and buyers of repair parts for rock products processing machinery have assured us that it has paid off for them to always make a rough sketch of a repair part or location in the machine that is to be replaced.

This is particularly true when the machine is an old one, when the part has no number on the bill of material or whenever there is the slightest possibility of a misunderstanding.

Anyone who is familiar with machinery can make a sketch that is distinct enough so that the dealer or manufacturer can understand what is needed. Very frequently the part can be traced on a piece of strong paper and any notes about the part can be made right next to the tracing.

Many machines have parts that are "right hand" or "left hand," and a rough sketch of the part will often tell the manufacturer the correct hand without an extended correspondence.

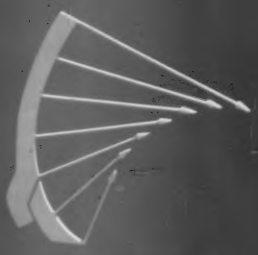
W. F. Schaphorst
Newark, New Jersey

(Continued on page 74)


the design of the blade makes
ALLIS-CHALMERS engineering in action

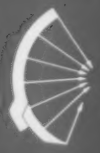
. . an Allis-Chalmers motor grader exclusive

THE ROLL-AWAY MOLDBOARD MOVES BIG LOADS FASTER



Each portion of blade forces material toward a *different* point. Packing is eliminated. Pressure and friction against blade decreases toward top of blade — no wasted power.

ORDINARY MOLDBOARD



Each portion of blade forces material toward a *fixed* point. Packing action causes high friction over entire blade — wastes power.

ALLIS-CHALMERS, CONSTRUCTION MACHINERY DIVISION, MILWAUKEE 1, WISCONSIN

the difference

ROLL-AWAY is an Allis-Chalmers trademark.

ROLL-AWAY

HINTS AND HELPS

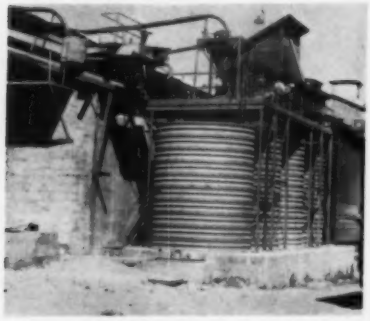
(Continued from page 70)

Clay in fine crushing

EUROPEAN PRODUCERS have found that a great deal of their fine materials to be crushed contains clay which builds up on the smooth cone and mantle of their crushers. It is possible to reduce this difficulty by spraying the top of the crusher or by adding water to the feed ahead of the crusher.

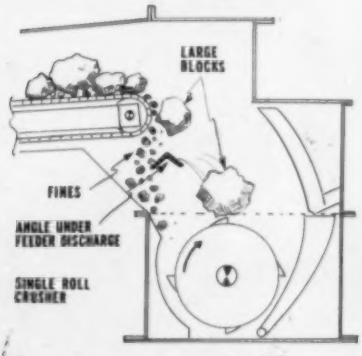
Herbert Motek
Essen-Werden,
Germany

Steel storage bins



A WESTERN INDUSTRIAL SAND producer made a very strong, lightweight but servicable sand storage system using sections of galvanized corrugated culvert. These sections were readily assembled in place on a concrete slab which housed the reclaim conveyor. These steel bins can be increased in size just as readily or removed to another location whenever necessary.

Here's a simple angle



EVERY ONCE in a great while we see a simple little device that seems to be almost human. The most recent was the way in which a simple 6 x 6-in. angle in the throat of a crusher hopper seemed to direct huge cubes of rock right into the nip of a single roll crusher.

Actually, this was the result of excellence in design, which located the angle in precisely the right position to allow the fines and small rock to drop behind it, and to catch the larger blocks in such a way that they tilted vertically rather than allowing them to drop flat onto the crusher roll.

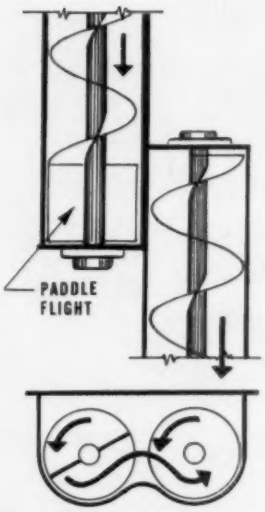
Substitute for glass

BROKEN WINDOWS and shattered glass are some of the hazards in any rock products plant in severe climates. Windows are often broken by flying stone, and they are difficult and inconvenient to keep repaired.

A Chicago area gravel producer has discovered that one or two plastic sheets on the market do the job in windows as well as glass. By replacing all the tilting windows with plastic panes he has practically eliminated the cost of maintaining windows and skylights. Any damage is quickly and easily repaired with another pane of plastic.

The plastic material has proved to be so versatile that they are experimenting with other applications. The tops of scale hoppers have been enclosed with sheets of translucent plastic. Now the operators can see into the hoppers, and at the same time, no material can be thrown out of the bin.

The producer has fitted several chutes with translucent covers, and has bolted several plastic inspection doors in the sides or bottoms of bins.



Screw conveyor novelty

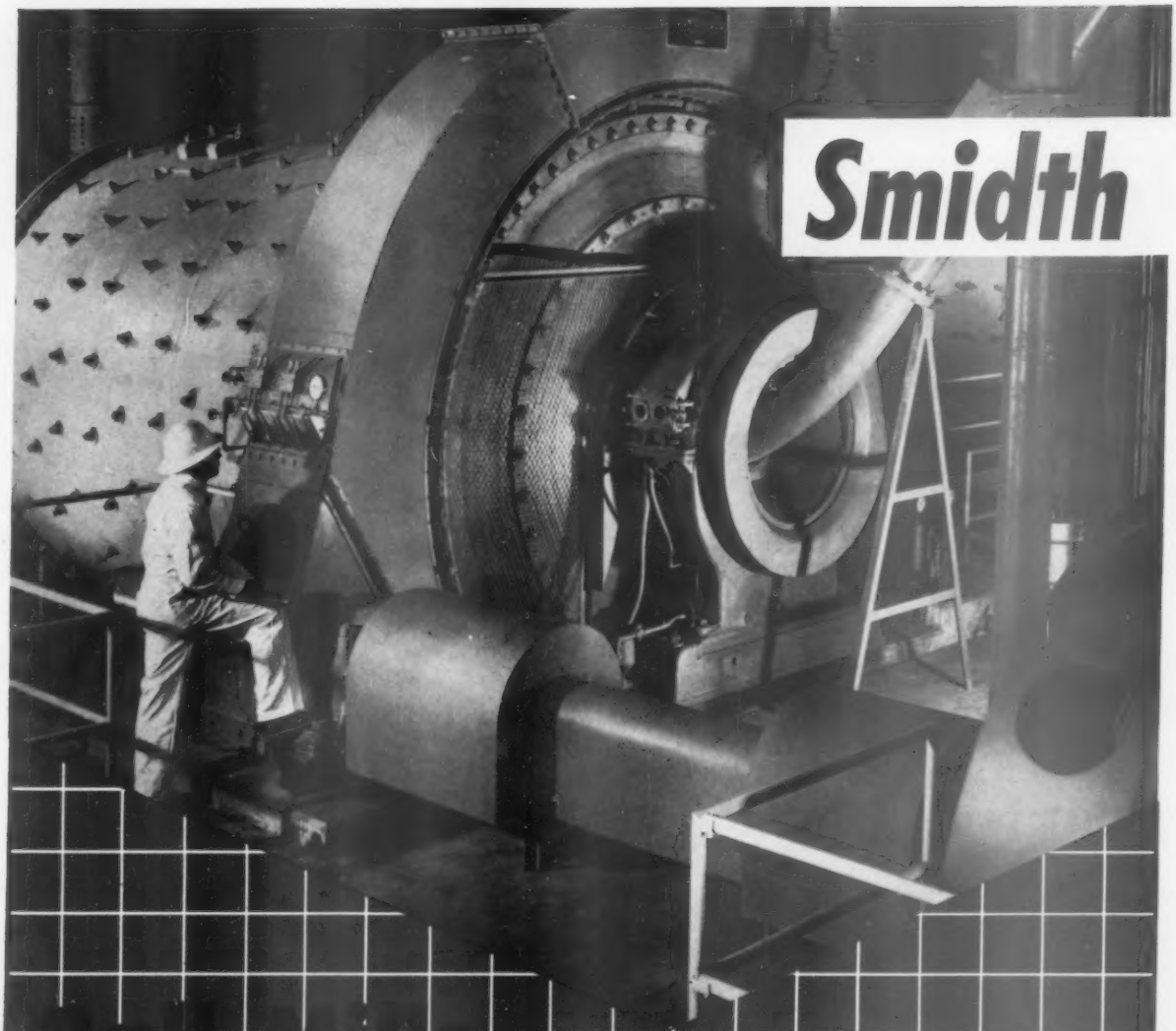
VERY FEW MANUFACTURERS' catalogs show devices for transfering material from one screw conveyor to the next when they are side by side or in line. The conventional method is to discharge from one into the other by gravity, requiring that one be inclined—calling for special supports and design work.

A Southwestern gypsum producer purchased a long line of screw conveyors to handle calcined gypsum several hundred feet. However, the conveyors were made up in short sections with duplicate drives and standard supports, and each conveyor discharged to the one following, on the level. This was done by inserting a paddle, or rotating plate in the last foot of each conveyor. This plate flipped the material from one screw to the next, making a very effective transfer.

Steel culvert

ROCK PRODUCTS PRODUCERS have found increasing use for steel culvert in their operations where strength, lightness and ease of assembly are needed. This western producer stocks out four sizes of crushed stone over a 96-in. culvert which houses the reclaim belt conveyor. Reclaim gates are simply bolted to rectangular openings cut into the top of the pipe.

END



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This maximum availability coupled with a minimum of maintenance is typical of P&H performance in important mines and quarries throughout the world. That's why leading operators are choosing P&H Electrics for both new installations and replacements.

Comparison tests have proved that two exclusive P&H features pay off in *continuous profitable production:*

MAGNETORQUE, the electro-magnetic type coupling that transmits power from hoist motor to dipper for faster action, eliminating shock and impact to the hoist gear train and motor.

ELECTRONIC CONTROLS, the fastest acting type of control available on electric shovels, providing the smoothest, quickest production cycle known.

With P&H you get single source responsibility . . . another distinct advantage experienced only by users of P&H Electric Shovels. P&H designs, manufactures and applies all electric rotating equipment specifically for electric shovel service.

P&H DIESEL ELECTRIC: 4½ cu. yd. capacity
P&H ELECTRIC SHOVEL LINE: 3½ through 10 cu. yd. capacities

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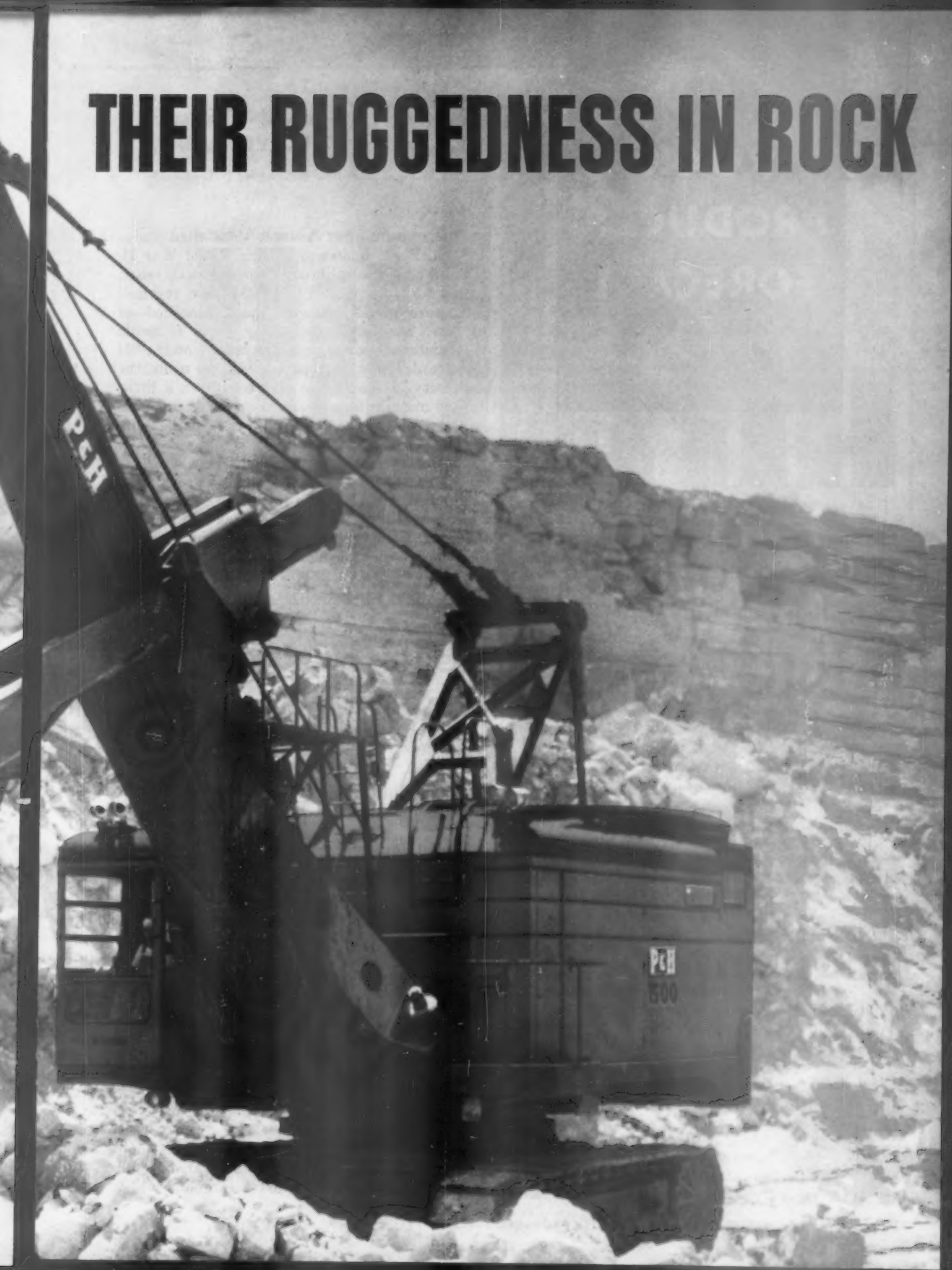
THEIR RUGGEDNESS IN ROCK



ROCK PRODUCTS FORECAST

Rock products—bright spot in the nation's economy . . . even tho the

THE ECONOMIC HONEYMOON in the United States—which got underway during World War II, swooped ecstatically through the post-war years, paused for a marital spat in 1954, then resumed its upward travel somewhat more chastened—is all over. The folks are coming home to settle down and make some necessary repairs on the old homestead. While the repairs are being made, the prosperity of the family may bog down a little. But not much or for long. So say most of the economists who have been dissecting our volatile economy in recent months.

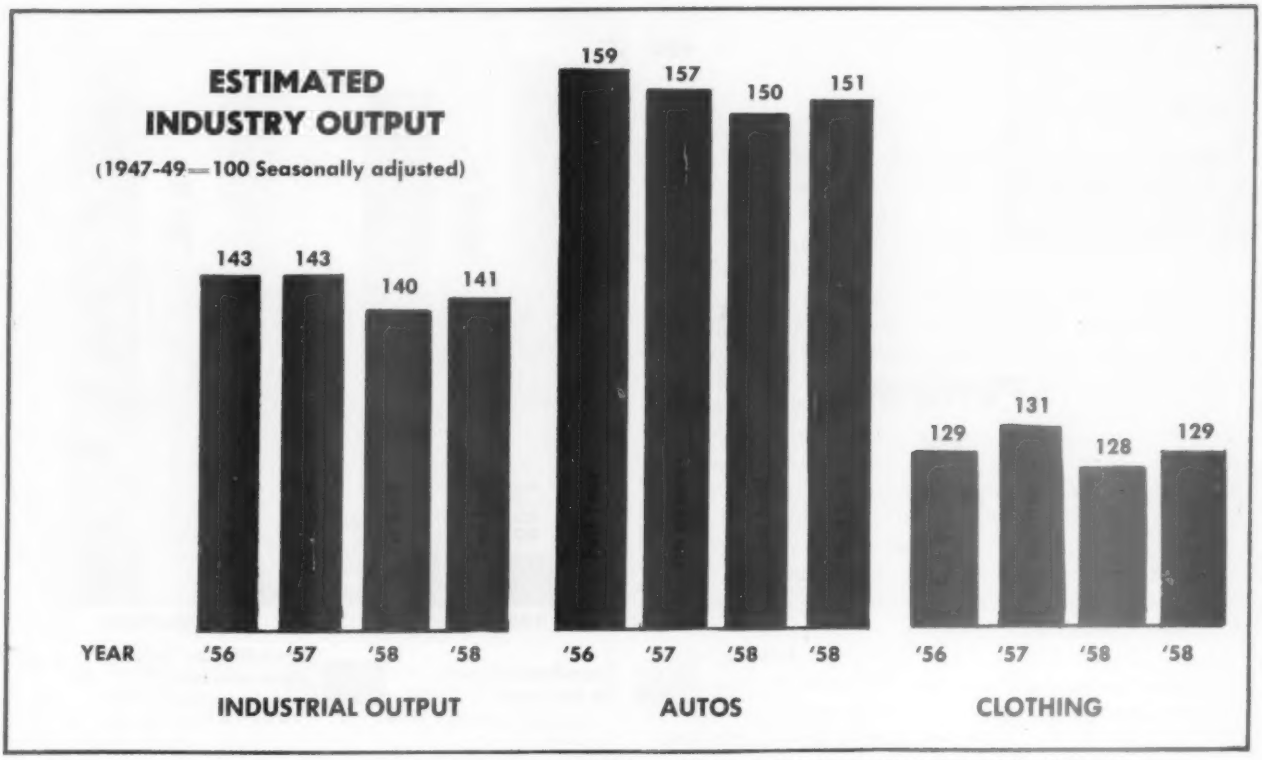
But in this subdued picture, there's a bright spot of considerable magnitude for the rock products industries. All of the factors in our economy which are still growing and will take up some of the slack in the year to come are strong potential markets for rock products producers. Thus, while the economy as a whole will probably sag in 1958, the rock products industries will likely hold their own and may show positive gains in a year of general industrial cutbacks.

What are some of the factors that presage a downswing in our general economy—and an upswing in rock products?

Capital spending. First of all, business as a whole plans to cut capital spending in 1958. A recent survey by the McGraw-Hill Publishing Co. shows capital expenditures will be trimmed seven percent next year, bringing them to a fraction less than the 1956 total. The Economic Unit of **U.S. News and World Report** also predicts: "Industry with more plants than it needs will cut back on buying new plants and equipment."

Dexter Keezer, vice president and director of economics for McGraw-Hill, adds: "Manufacturing industries would like to operate at about 90 percent of their capacity. At the present time, they are averaging about 82 percent. This build-up of capacity obviously means some let-up in the installation of new capacity."

There are a number of reasons for this slough-off in capital spending. For one thing, the steadily increasing demand for post-war goods which



Data taken from a copyrighted article in Nov. 1, 1957, issue of "U. S. News and World Report."

U.S. economic honeymoon is over

climbed phenomenally year-after-year and which could be met only with the greater capacity of newly equipped and expanded plants is leveling off now. Some of this new equipment is running below its "preferred operating rate."

In the meantime, the government's tight money policies—instituted in an effort to control inflation—finally put a stranglehold on capital spending. As demand leveled off, money became ever more costly and difficult to borrow, and the combination of these two pressures took its toll on capital spending in the latter part of 1957—just as it will in 1958, in spite of the Federal Reserve Commission's recent relaxation of tight money policies. However, next year's predicted capital spending of $36.1 billion is still far higher than any other year before 1956.

On the other side of the coin, there are three compensating factors which may hypo this business slowdown sufficiently to compensate for many of the cuts in spending. And, happily, all three compensating factors are near and dear to rock products operators. They are:

Federal spending. Total federal spending of $83 billion in 1957 was about $8 billion higher than 1956—and the figure will continue to grow next year. Substantial increases in military spending and the burgeoning highway program will account for much of this growth.

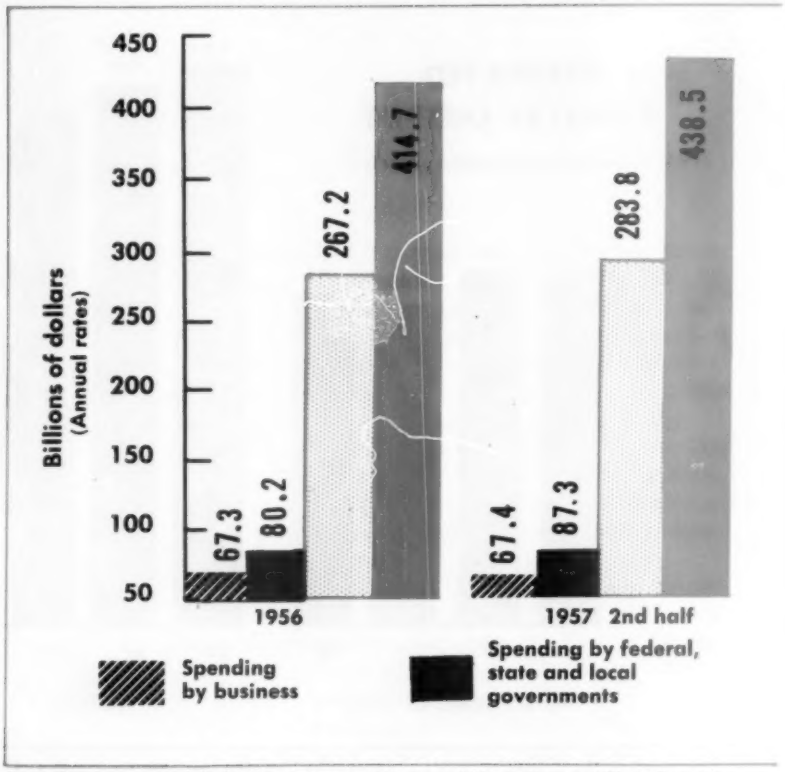
State and local government spending. Cash outlays by these two strata of government have increased at the steady rate of $3 billion a year for the last five years. There is every indication that this will continue in 1958—with population increases and the need for schools and highways the principal contributing factors.

Residential construction. After hitting some sticky going the last two years, residential construction appears to be on the upswing again in 1958. Some analysts predict a gain of 50,000 to 100,000 in housing starts next year. This will be made possible by easier mortgage money and continued high consumer income, both of which will apparently carry over into 1958.

Also in this generally sobering picture are some other developments that indicate bigger and better years ahead.

ROCK PRODUCTS FORECAST

SPENDING IN U. S.



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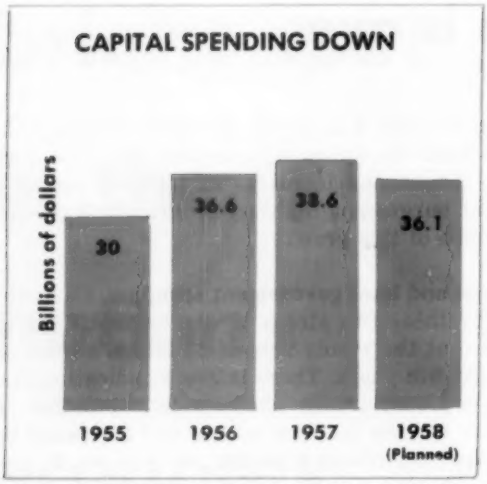


Figures for this graph were taken from the Nov. 1, 1957, issue of "Business Week" and are reproduced here by special permission.

Probably the outstanding example is the increase in money which will be spent next year for research and development—making it the largest year in our history. This is clearly paving the way for another surge in new plants and equipment—to build the new products which will grow out of this accelerated research program.

In spite of lagging employment and soggy spots in industry, individuals are enjoying record amounts of income which is helping to hold demand at a high level.

The demand for new construction—especially utilities and public works—is due to rise, not to decline.

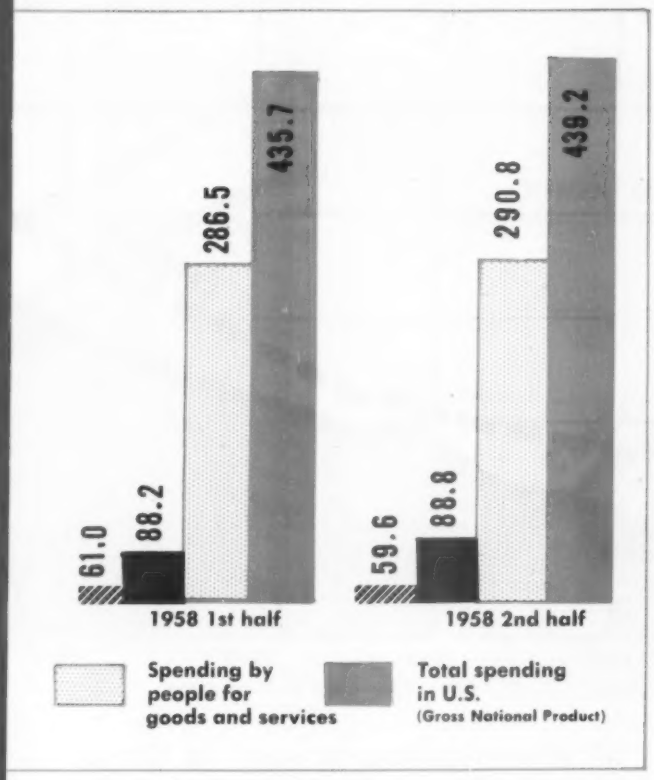
A strong growth trend in population continues—and as the population grows, so does the demand for goods.

And factory cutbacks—those now in evidence and those to come in 1958—will bring output in line with consumption and will stimulate demand for consumer goods over the long pull.

In this connection, McGraw-Hill's Dexter Keezer predicts that "1958 will certainly be one of the most competitive years since the end of World War II."

The economic forecast. Specifically, here's how 1958 looks to 108 of the nation's top-flight economists who assembled recently to take part in the University of Michigan's Conference on the Economic Outlook. These experts forecast that:

—Prices will probably go up about one percent;
—Gross private investment will decline some five percent;
—Corporate profits will be lower by about three percent;



—Gross national product will be about the same as 1957's record breaking $439 billion;

—Industrial production will fall off from 1.5 to 2 percent (as contrasted with a decline of five to six percent during the recession of 1954);

—Unemployment will increase, but not much (about 400,000 to make a total unemployed of some 3,200,000).

Secretary of Commerce Sinclair Weeks sums up the year ahead like this:

"In recent months, business has been experiencing a mild rolling readjustment. Investment expenditures have moderated. The rate of factory production is not as dramatic as earlier. Some industries show decline; others are standing still; some continue to forge ahead. The cost-price squeeze is troublesome.

"The important thing to note is that, although over-all business has been leveling off, this sideways movement is in fact on a record high plateau. Thus, 1958 may be a breather with changes from '57 fractional only. Among the many plus factors in the economy are: easing of inflationary pressures; growth of needed civic construction such as highways, schools and hospitals; residential housing firming up; and income and consumer expenditures continuing very high."

And while Secretary Weeks is observing his "rolling readjustment," Leonard Smith, commercial research manager for the U. S. Rubber Company, gives us this note to end on: "This is one of those modern recessions where no one feels much pain. I am convinced that it's not going to be very deep."

To which the rock products industries add a fervent, "Amen."

Cement—a breathing spell, then growing demand

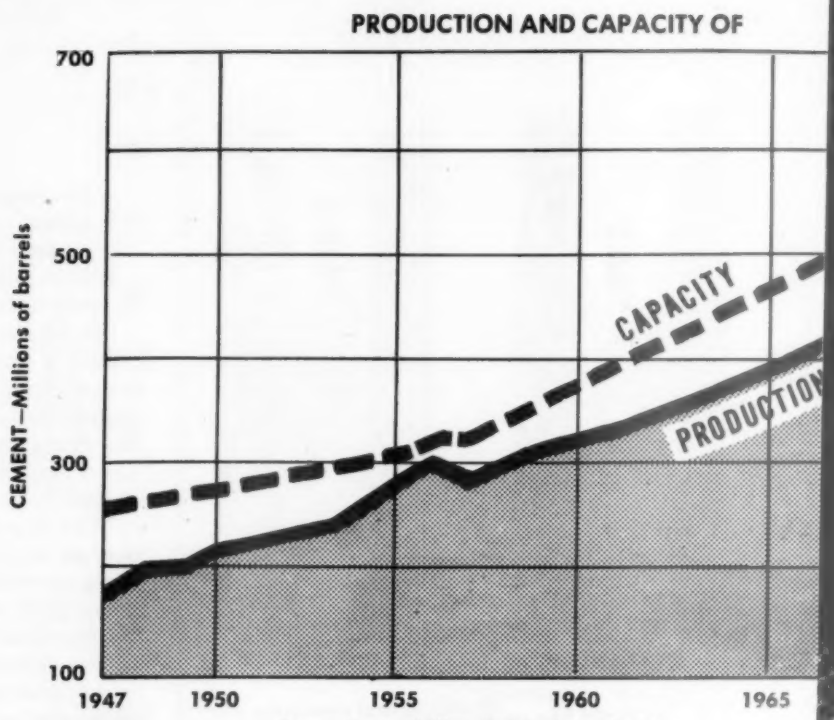
CEMENT CONTINUES TO BE the fastest growing of the rock products industries. And at the same time the loudest cries of alarm are also coming from the cement industry—cries of "overexpansion" and "overproduction." If this appears paradoxical in an industry where shortages were the order of the day not very long ago, perhaps it's because producers got a trifle spoiled in this seller's paradise of recent years, and the slight pinch in 1957 in a few areas hurt more than it might in leaner times.

At any rate—with over 40 percent of the total production represented—respondents to the ROCK PRODUCTS survey plan an average increase in production of 8.9 percent in 1958 over the previous year. This represents 87 percent of capacity in 1957, and a predicted 88 percent of capacity in 1958. Further expansion of production is seen for several years to come, averaging an increase of 3.5 percent in 1959, 3.2 percent in 1960 and 4.1 percent in 1961—in each instance the increase being figured on total production in the previous year.

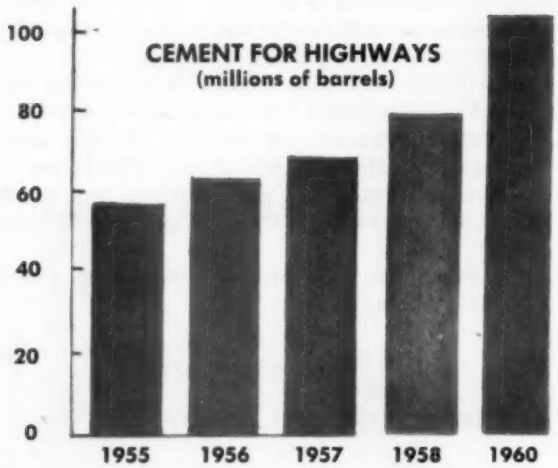
Those answering the survey plan seven entirely new plants in the next three years, adding 12,600,000 bbl. of capacity. In addition, extensive modernizing will be carried out at 11 existing plants. These companies report their average current investment per bbl. of annual output is $3.60—an increase of 46 percent over the 1952 average.

Efficiency has also increased considerably during the same period. The average current output in bbl. per man hour is 4.24; in 1952, it was 3.82

ROCK PRODUCTS FORECAST



Sources: Bureau of Mines, Rock Products estimates



bbl. About 65 percent expect this productivity rate to show a further increase in 1958.

Three-fourths of the cement respondents raised their prices in 1957, by an average of five percent. Almost the same number expect another price rise in 1958—going up about four percent this time.

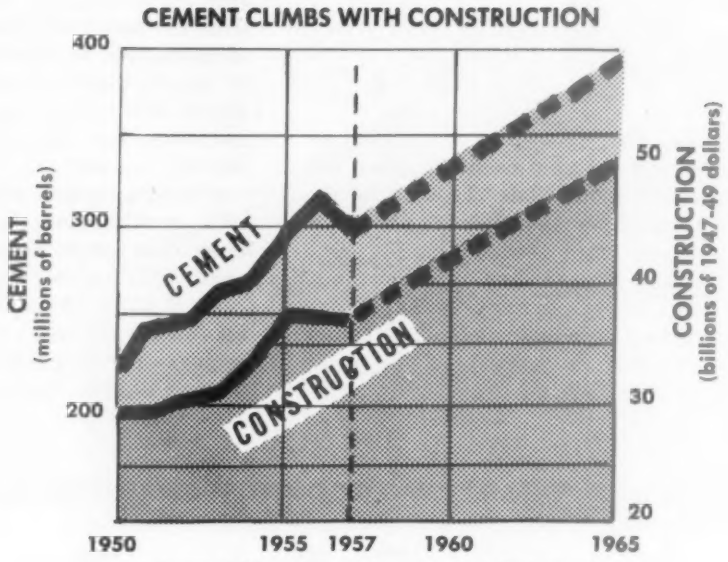
Any of you who were unable to obtain cement last year will be especially interested to know that the cement producers agreed unanimously that production was adequate to meet demand in 1957 and will be in 1958. Like other members of the rock products industries, cement producers reported that the stepped-up federal highway building program had little effect on 1957 sales, increasing them by an average of only two percent.

The cement manufacturers expect the highway program to increase sales by 4.3 percent in 1958 and by a whopping 10.1 percent in 1959.

Cement companies are highly conscious of safety, with 95 percent reporting that they have a formal safety program. They are also heavy contributors to product research and development. Those companies surveyed reported an average yearly expenditure of $133,000 per company for research—or $18,600 per million bbl. of production. And three-fourths of the cement manufacturers expect to increase this amount in the near future.

As for markets, returns representing about one-fourth industry capacity showed that a remarkable 49.2 percent of production went to the ready-mix concrete industry. Concrete products accounted for 12.4 percent of sales; highways, 12.2 percent; housing, 9.4; industrial, 2.7 and other uses, 14.1 percent. These figures are not necessarily end uses, but represent the first destination of sales after they leave the cement plant.

Cement producers listed a rather large range of technological advances they considered the most significant over recent years. At the top of the list was instrumentation, followed closely by its corollary, automation—in the simplifying of manufacturing flow, mechanical proportioning, silo loading, and kiln burning. Other advances which received special attention included: improvement in quarry blasting and drilling techniques, increases in fuel efficiency and economy, preheater kiln



Sources: Bureau of Mines, Dept. of Commerce, Rock Products estimates

feeds, conveying of material by air slide, improved crushing and grinding equipment, and larger production units.

As for the future, cement manufacturers are looking to automation— especially in kiln burning, grinding and mix control—for great strides in increasing the efficiency of cement production. Improved quality control was mentioned a number of times, specifically through the use of x-ray or by remote control from the plant laboratories. Other developments deemed of major importance in the future included increased fuel efficiency, larger producing units and more efficient raw grinding.

There's a strange and interesting seeming contradiction in the problems listed by cement manufacturers as of primary importance to the industry today and in the future. An overwhelming number named overexpansion and overcapacity as the largest problem of the moment. Yet, an equally large percentage noted an increased demand for cement, resulting from population growth and other factors, as the primary problem of the future. From this it would appear that today's number one problem will resolve itself almost automatically in the changes expected in the near future. Two other present-day problems received frequent mention: inadequate depreciation charges and rising costs of operation—particularly in labor, fuel, transportation and manufacturing equip-

THE ASSOCIATION'S OUTLOOK

Final figures on shipments of cement during the year are not yet available from the Bureau of Mines, but their reports show shipments during the twelve months ending September 30, 1957, of 288,280,000 barrels. This is about five percent less than shipments reported by the Bureau in the preceding 12 months. The slight decline reflects a decline in the physical volume of construction during 1957 as reported by the Departments of Commerce and Labor.

Official estimates place highway construction at eight percent above 1956, and predict a 14 percent increase next year. The impact of the highway program was felt on concrete and soil-cement paving awards during 1957. During the first 10 months of the year, awards of concrete pavement of all types were up 7.8 percent, and road pavement was up 13.8 percent. Soil-cement continued its rapid growth with a 22 percent increase during the first 11 months of 1957. Soil-cement awards for roads alone were up 42 percent during the same period.

The latest figures available for production of concrete masonry and ready-mix concrete cover 1956. Both showed increasing production despite a slump in homebuilding. Estimates from various trade sources place ready-mix production at 90 million cubic yards, and block production at 2,150 million 8-in equivalent units.

An increase in public construction in 1957 offset a slight weakness in the private sector, and is predicted to continue to do so in 1958 according to these sources.

G. DONALD KENNEDY
PORTLAND CEMENT ASSOCIATION

ment. Other problems mentioned included the growth of competitive materials, the need for developing new markets and the necessity for better quality control and more realistic pricing. One item was significant by its virtual omission. Only one return listed labor relations as a primary problem of the cement industry, which is rather remarkable in view of the labor problems which beset the industry in 1957.

To summarize: Cement producers in 1957 felt the first tightening they've experienced since World War II—and some of the less hardy members of the industry became a little restive in this growing competitive situation. But all the indications for continued prosperity are present. Ratio of production to capacity is high and is expected to remain high. Increased allocations to research should help expand future markets. And by their own admission, cement manufacturers expect the growing amount of construction represented in our highway program and the sociological changes of a growing and prospering population in the immediate future to make cement a shortage item again within a few years.

So it looks like a short breathing spell, then another steady trend toward increased demand for cement—perhaps not as spectacular as in recent years, but even more dependable.

Sand, gravel—beset by problems, standing pat on production

SAND AND GRAVEL OPERATORS expect a rather small increase in production in 1958: 2.2 percent over 1957. They operated at 78 percent of capacity in 1957. With the slight increase expected in 1958, they will be operating at 79 percent of capacity. Future expansion plans are conservative and generally unsettled. Only 1.5 percent expansion is planned in 1959. This grows to a predicted 2.6 in 1960, but none of the companies reporting cared to venture a guess at this time as to what their production plans might be in 1961.

New sand and gravel operations are few and far between. Less than eight percent of the producers reporting expect to put in any new plants in the near future. Extensive modernizing is somewhat more prevalent but still reflects the cautious feeling of the industry today. About 26 percent of the producers have plant modernizing projects in the planning stage or actually underway. When completed in 1959, they'll jack up 1957 capacity by about 4.2 percent.

As might be expected, capital investment in the sand and gravel industry has shown an abrupt increase over recent years. The current average investment per ton of annual output among those companies reporting is $1.32 per ton—an increase of 35 percent since 1952. About 44 percent of the sales dollar is represented by investment per annual ton—a figure that about a third of the operators considered significant in their expansion plans.

While capital investment was climbing at an alarming rate during the past five years, productivity was also increasing—but at a much more modest pace: from 9.1 tons of material per man hour in 1952 to 10.7 in 1957, a gain of 17.6 percent. Less than half of the producers expect to better this rate in 1957.

New crushing equipment and added beneficiation equipment were most frequently mentioned as the most important technological advances in the past few years. Improved diesel power and better materials handling equipment also received attention—plus several suggestions that better efficiency has been obtained through increased knowledge and more intelligent use of existing equipment. One hoped-for future development stood out head-and-shoulders above the rest: new

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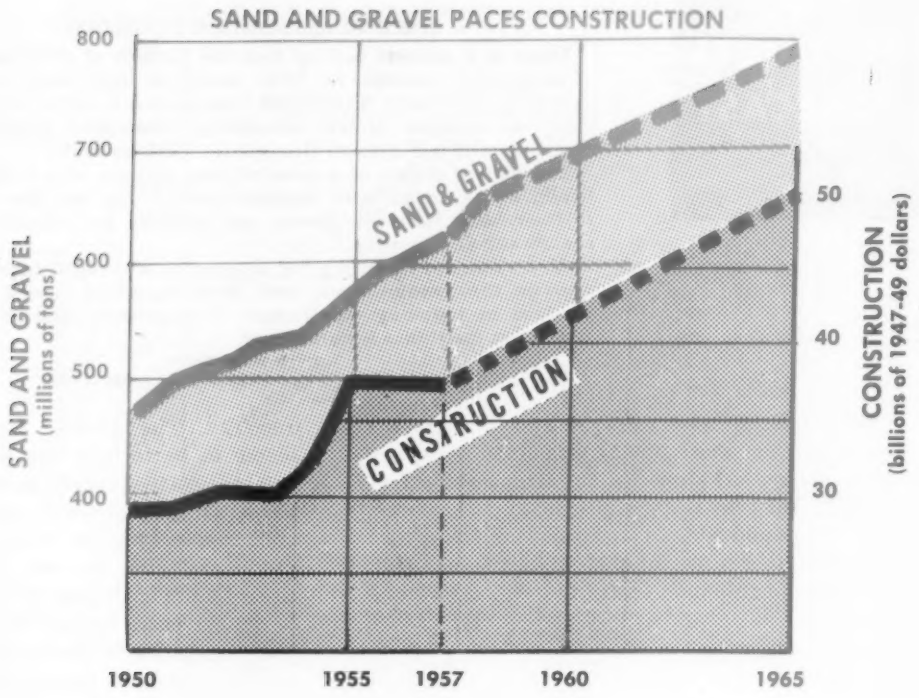
THE ASSOCIATION'S OUTLOOK

"Highway Program will go forward at greater momentum next year than this year and this will provide wider market particularly for sand and gravel. Doubt if homebuilding will be greater next year than this year. Prospects do not point to substantial increases in industrial construction next year but believe that there will be measurable increase in commercial construction, an important market for us. Public utility construction, good this year, should continue good next year. Local public works should register increase next year over this year. All in all, I don't expect any substantial change in our market next year on nationwide basis, but demand and need for all types of construction will persist and sand and gravel and ready mixed concrete should have reasonably decent market for next five years at least."

VINCENT P. AHEARN
NATIONAL SAND AND GRAVEL ASSOCIATION



These problems plague the industry: wages, zoning, labor, taxes, rising costs and material procurement

and better classification equipment, including the gradation of fines. Only 46 percent of the respondents, however, expected technological advances to be sufficient to compensate for increased costs in the near future.

In pricing, 58 percent of the operators reported they had raised their prices in 1957—by an average of 8.4 percent. About the same proportion say they will not raise prices in 1958. (The 42 percent planning an increase in '58 expect prices to go up 7.1 percent.) An overwhelming majority (97 percent) expect the cost-price squeeze to continue in 1958, and 77 percent fear it will extend through 1959 as well.

Hope is still springing eternal among the sand and gravel operators for a large and growing highway market. Highways were by far the most frequently mentioned among markets expected to increase in 1958. Also mentioned among increasing markets were aggregates, concrete masonry and ready-mixed concrete.

Hopes for a booming future highway market certainly weren't predicated on income from this source in 1957. Less than 20 percent reported that the highway program had provided any increase in sales last year, and the across-the-board sales growth accounted for by the new highway program averaged only 1.3 percent. But 80 percent of the sand and gravel operators reporting were hopeful that the highway program would increase sales materially next year—with guesses as to the size of the increase averaging about 11 percent.

More than 90 percent of the producers consider safety to be as important an operating phase as production, but only 47 percent believe in it strongly enough to have a formal safety program.

About 60 percent are presently spending money on research and development work, averaging about $1,840 per firm per year—or $650 per million tons of production. Some 62 percent expect to increase the amount set aside for research in the near future.

THE SLAG ASSOCIATION'S OUTLOOK

There is a general feeling that the pattern of slag sales, both in usage and tonnage, for 1957 would be very close to that reported in 1956, over 35,000,000 tons having a value of $50,000,000 was reached. Unless something unforeseen develops, this same pattern will prevail throughout 1958 as well.

The annual output of processed blast furnace slag is now practically equal to the total amount produced by the Steel Industry in their blast furnaces. Hence, our Industry has almost reached the ultimate in capacity.

Slag continues to be in great demand as a mineral aggregate for various construction uses, and often specified where skid resistance in highway construction is important, and in concrete where fire resistance is paramount.

E. W. BAUMAN
NATIONAL SLAG ASSOCIATION

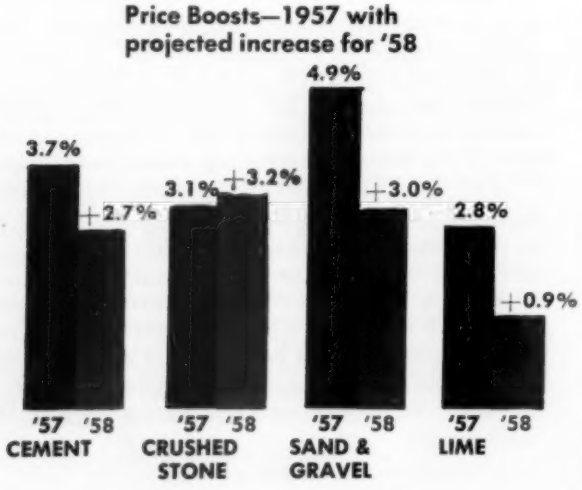
Several dozen items were mentioned as the biggest problems faced by the sand and gravel industry today, but six stood out considerably from the rest. They are:

1. Wages and labor.
2. Obtaining sufficient amount of raw material.
3. Rising equipment costs.
4. Taxes.
5. Transportation costs.
6. Zoning.

To summarize: The sand-and-gravel industry is in a highly volatile state of mixed prosperity and difficulty. The general feeling of the industry seems to be to hold the line and await developments. Relatively little growth is planned, as emphasis is turned toward improving plant efficiency and coming to grips with some of the explosive problems facing the industry today—particularly those tied in with general public misunderstanding of the purposes and needs of the sand and gravel industry. It looks like a few cautious years ahead for the sand and gravel producers. After that—if some of the principal industry problems have been resolved—there appears to be a great deal of potential for growth.

Crushed stone—growing production and growing problems

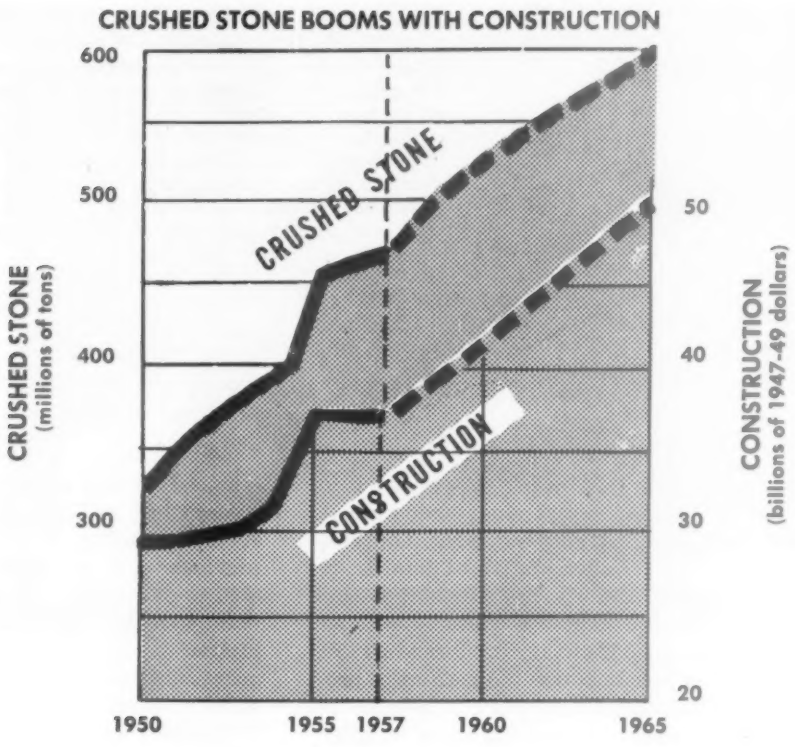
CRUSHED STONE COMPANIES are operating close to capacity and expect to increase their production almost five percent in 1958 over 1957. In both years, the plants reporting in the ROCK PRODUCTS survey will operate at 89 percent of capacity—the highest figure among all the rock products industries.



Crushed stone operators are also planning highly ambitious expansion programs over the next few years. An average of the companies reporting shows an expected increase of 10 percent in production in 1959, an additional six percent in 1960, and another five percent in 1961. To provide this increased production three new plants are now under construction at an average capital expenditure of $423,000. Two expect to be in operation in 1958, the other a year later. In addition, more than half the companies reporting expect to modernize and improve one or more of their plants over the next three years.

Investment per ton of annual output in the crushed stone industry averaged $1.95 last year. This represents an increase of 38 percent since 1952. The average output of material per man hour has increased from 6.44 tons in 1952 to 7.12 tons last year. About 60 percent of the producers expect to improve on this figure in 1958.

The producers were split almost half-and-half on price rises in 1957. Among those who raised prices, the average increase was seven percent. Again, half of the crushed stone operators expect



another price increase in 1958, with expectations averaging out at an increase of 6.33 percent.

The federal highway program provided scarcely a dent in crushed stone sales last year. Those producers reporting estimated that the highway program increased sales by only 2.26 percent. However they expect better things in 1958—adding up to an increase of seven percent in sales to the highway builders.

Enthusiasm over research was somewhat less than that shown for safety. More than 80 percent reported a formal safety program, but only half expect to increase their allocation for research next year.

Among the technological advances deemed most important over the last few years, the following received special recognition: continuity of flow of materials through the mill; double impact primary crushers; improved drills and bits; improved and modernized hauling equipment. In the future, producers will be looking forward to further developments in hauling equipment, screening and explosives or some less devastating way of primary breakage.

Three industry problems were mentioned most frequently: the increased cost of labor, the mushrooming cost of transportation and the dwindling supply of raw material sites. Taxes and zoning also received special attention. In discussing industry problems, producers used such terms as "unreasonable and dictatorial union labor," "cutthroat competition" and "inflation of costs with no comparable increase in price."

As for future problems, one producer probably summed it up best when he said "the ones we have now will just get worse."

To summarize: The crushed stone industry appears headed, in 1958, for a further uneasy expansion. Operating close to capacity, with markets increasing—but not as fast as in recent years—surface indications appear good. But some of the problems which threaten to muddle this picture will probably get worse in 1958—particularly the price-cost squeeze and labor problems. The future is good, but crushed stone operators will have to turn more attention to solving some fundamental industry problems in order to realize the maximum benefit from strong and growing markets for their products.

ROCK PRODUCTS FORECAST

THE LIME ASSOCIATION'S OUTLOOK

We expect 1957 production to be about 9,300,000 tons. (Almost all open-market. Captive production amounts to an additional 1.5-2.0 million.) This would be a record, surpassing the previous high of 1955 by 70,000 tons. You will note that shipments through September are 2 percent ahead of the similar period in 1956.

1958 looks like another good year, but probably not a record. Recent cutbacks in steel production already are reducing lime shipments considerably (steel is lime's biggest customer). On the plus side is the rapidly growing use of lime stabilization.

BOB BOYNTON
NATIONAL LIME ASSOCIATION

Lime—market, cost problems drive out some producers

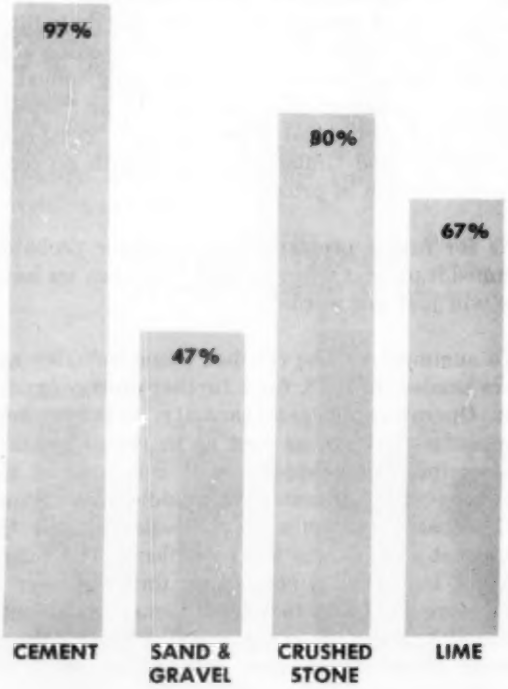
THE LIME BUSINESS follows pretty well along in the vein of the other rock products industries—sit tight, hold the line and see what happens. Producers of more than one-fourth of total U. S. lime production replied to the ROCK PRODUCTS survey. These companies expect to produce 9.1 per cent more lime in 1958 that they produced in 1957. But they don't expect to better the percent of productive capacity utilized; it was 73 percent in 1957, and they expect it to be the same in 1958.

As for expansion plans, 30 percent of the companies plan to expand production in 1959, 20 percent in 1960 and 20 percent again in 1961. The increases in production will be rather small, however, amounting to about four percent over the previous year in each of the three years cited above.

Only one entirely new plant was reported planned or underway—a $1 million, 100,000 ton operation. Two other sizeable plants will undergo some modernization in 1958.

The lime industry's current investment per ton of annual output varied greatly, from $2.50 to $20—with the average at $9.05. This figure has increased by 28 percent since 1952. The percent of sales dollar represented by investment per annual ton also fluctuated considerably, averaging out at 55 percent.

FORMAL SAFETY PROGRAMS IN ROCK PRODUCTS INDUSTRIES



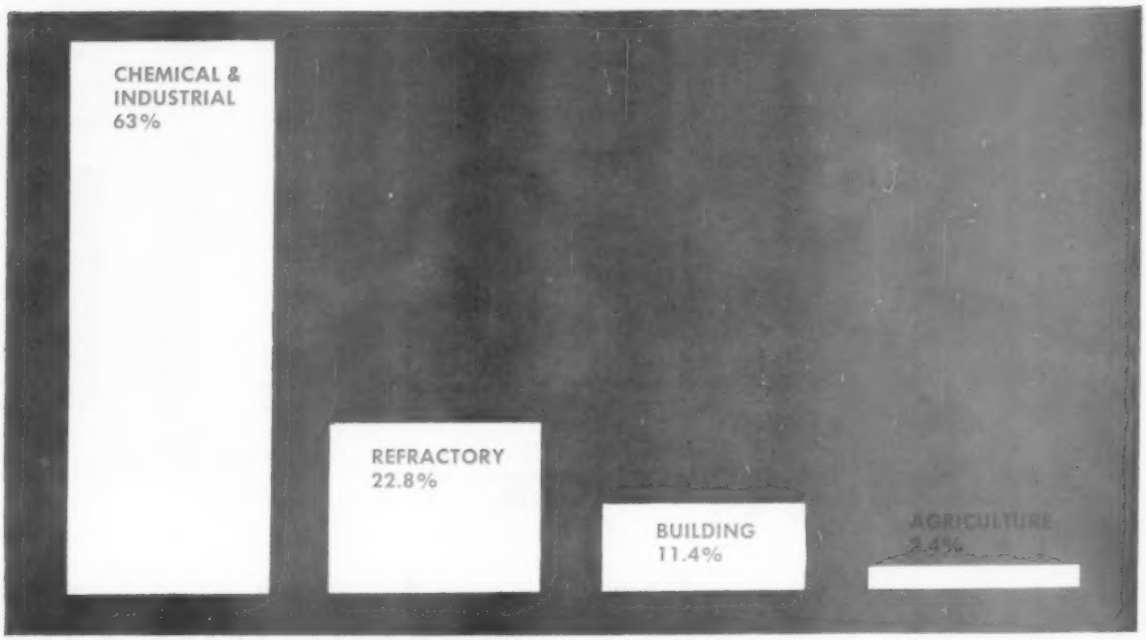
The average output of material per man hour has increased 13 percent in the lime industry over the past five years—jumping from 2.2 to 2.9 tons. But 70 percent of the producers reporting don't expect to improve on this productivity rate in 1958.

The industry was almost split equally between those who raised prices last year and those who didn't. Among the half who jacked up prices, the average raise was 5.7 percent. Again, 70 percent predict there will be no further increases in 1958—but 90 percent expect a continuation of the cost-price squeeze through 1958 and 1959.

Both safety and research are coming in for an increasing share of attention and money from the lime industry. There were 67 percent reporting a formal safety program, and 58 percent who expect to materially increase the amount of money set aside for research in the next few years.

As for industry problems, perhaps they were best typified by the unusually large number of returns which came back marked "sold out lime plant" or "no longer in the lime business." Among

WHERE LIME PRODUCTION GOES



those still active, the problems most often repeated were: rising labor costs; increase in freight rates; and "restricted market and reduced demand due to changes in manufacturing process of pulp and paper and use of such substitutes as wall board, gypsum and mortar mix."

Future problems were pinpointed by one producer who said: "Outside industries with large reserves may move in and take over new markets from old companies which do not have means to invest in large new capacity plants. This is already appearing in lime companies which have changed ownership in the past few years."

Technological improvements which have impressed lime producers center almost entirely around mechanization—and include such things as automatic-feed from storage, conveyor equipment to eliminate rehandling and automatic quarrying equipment.

To summarize: The lime industry appears to be in transition—caught between high costs of establishing large capacity plants or operating low cost ones and a dwindling segment of market as a result of more effective competition from other types of building materials. In spite of these problems, expansion of production facilities continues —even in light of the lowest ratio of production to capacity in the rock products industries: 73 percent. This is compensated for to some extent by a considerable growth in efficiency—again the largest among allied industries. Increasing research and product development and greater efficiency in operation seem to be the primary hopes of the lime industry, not only in meeting a growing list of problems but in maintaining and adding to the post-war prosperity of the industry.

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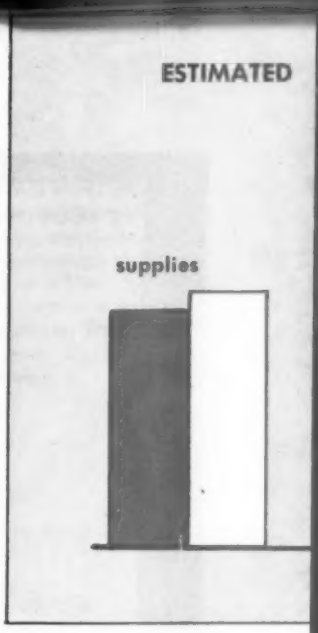
NALI's OUTLOOK

According to U. S. Department of Agriculture, the Agricultural Conservation Program provides 70 to 75 percent of the business for the aglime industry varying in individual states from about 20 to 95 percent. We believe there will not be the same increase in aglime business in 1958 as in 1956 and 1957 but that business will level off. Some states may improve ACP program over previous years but the tendency for new state committee appointees by present administration to follow their philosophies will have restrictive effect in some areas. As far as industry's promotion of aglime, we see nothing which will change their efforts or results. Congress will probably overhaul the conservation programs in 1959. This will affect industry dependent on outcome. Overhaul will not affect 1958 program. If our efforts to have conservation reserve program of soil bank modified so it is more like ACP, tonnage could show marked increase in some states next Fall.

ROBERT M. KOCH
NATIONAL AGRICULTURAL LIMESTONE INSTITUTE

Estimate total sales gains in equipment and supplies in this industry at more than 5.7 higher than in 1957



Economist predicts:

Construction rise

By PETER B. B. ANDREWS
Supervising Economist, Future Sales Ratings

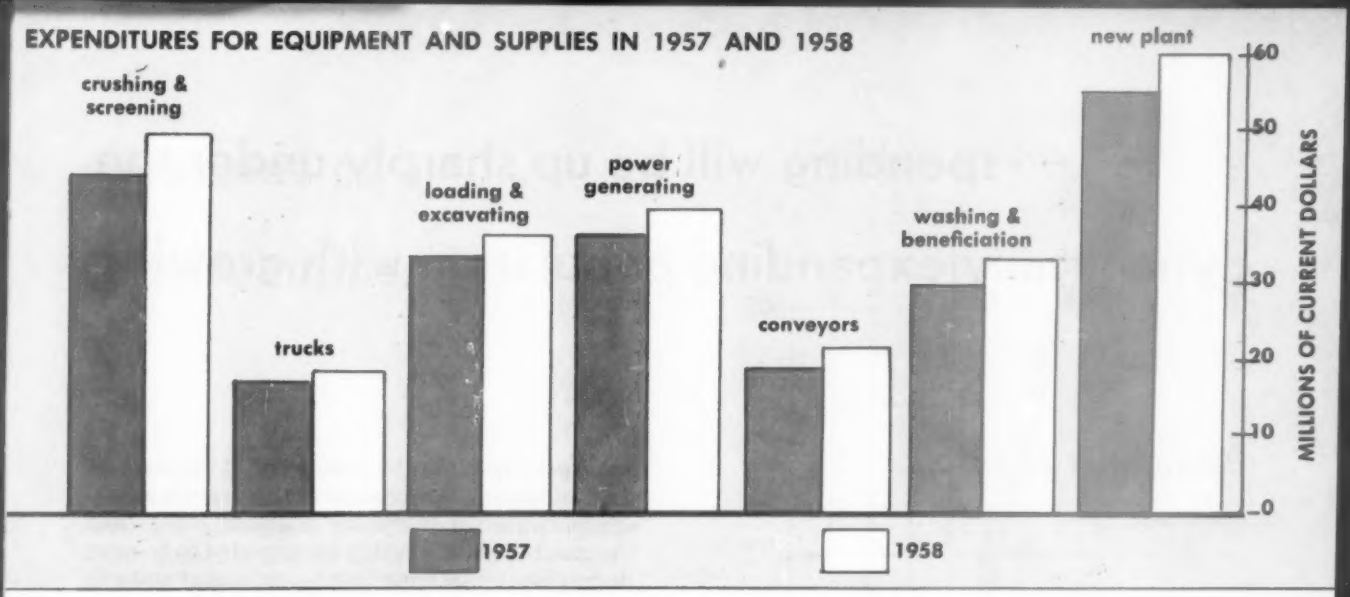
The Future Sales Ratings Board of Analysts is comprised of over 300 economists, statisticians and marketing experts in Government and private industry. It is one of the most experienced economic predicting panels on all the nation's industries. Here this Board looks at the rock products industry, one of the most important in this country.

A RECORD-BREAKING LEVEL of activity for the rock products industries in 1958 and a demand for new plants and equipment substantially greater than the previous record year 1957—this is the prediction of our Board of Analysts, in spite of what has been written and said recently about business declines.

The Board of Analysts was commissioned exclusively by ROCK PRODUCTS to make a survey and to obtain specific projections for 1958. Here are the potential increases in the sale of capital equipment and supplies to the nonmetallic mining industry during the next year.

Total gains in equipment and supplies sales in this industry, therefore, are placed at better than 5.7 percent higher than in 1957. This is one of the strongest markets in the country's basic industries.

Sales gains of this size are definitely attainable according to a concensus of the Board, unless manufacturers and distributors of this equipment develop a defeatist attitude in their sales development programs for 1958.



and record spending in '58

These projections of sales increases for plant and equipment in the nonmetallic mining industry assume average advertising and promotion increases by manufacturers in these industries. However, our Board agrees that even better sales improvements can be made if promotional programs are stepped up sufficiently to crystallize sales opportunities in this market. Conversely, weak promotional programs may result in little or no gain in equipment sales over 1957.

Construction—the big factor

These great potentials in 1958 are the Board's recognition that there is a record-breaking potential demand ahead for the varied products of the nonmetallic mining industry. This demand is headed by faster development of the huge highway building program and a considerable recovery in home-building. The Board anticipates substantial gains in much-needed building of schools, hospitals, churches, as well as office buildings. Municipal and state spending will be up sharply under the pressures of a dynamically expanding population with growing requirements.

Federal and state highway programs will account for 60 percent of total highway construction. Total new highway construction is expected to reach $5.8 billion in the present fiscal year, a jump of 18 percent over a year earlier. Federal spending alone will more than double to $2.55 billion.

The fiscal year July, 1956 through June, 1957 saw the 41,000 mile federal-state road system get off to a good start, with expenditures at $4.9 billion. The fiscal year 1957-58 will see another jump, as indicated. The 1958-59 year is expected by the Board to top the preceding fiscal year by a wide margin.

Demand for products of the nonmetallic mining industry, which includes the broad categories of crushed stone, sand and gravel, clay, limestone, gypsum, refractory minerals, natural abrasives other than sand, chemical and fertilizer minerals and many other nonmetallic minerals including mica, native asphalt, pumice and talc, is expected to surpass in 1958 the record of the year 1957.

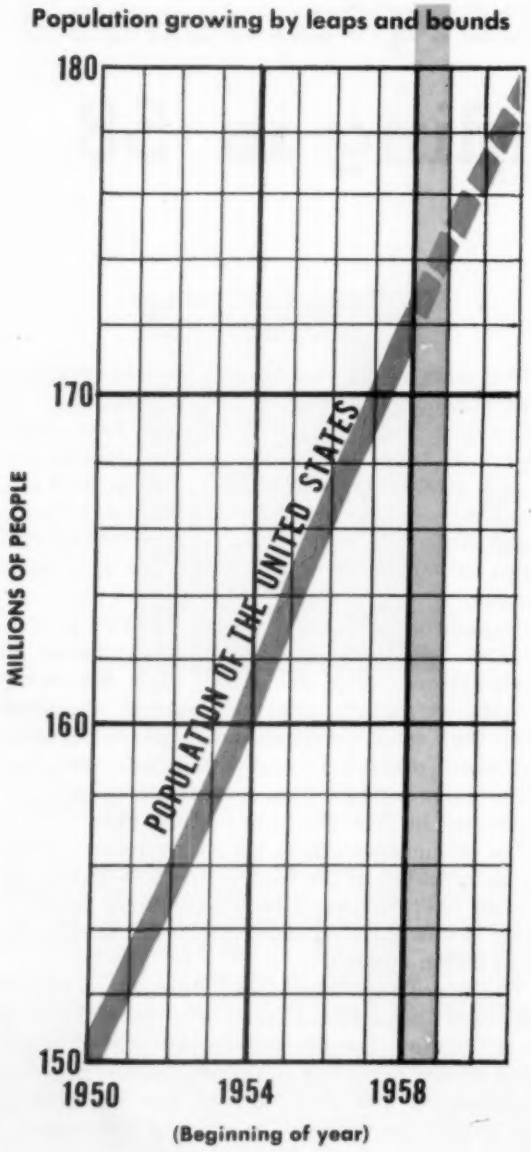
The tremendous size of the rock products industry is indicated in the fact that it has doubled in volume over the past 10 years. Rock products value is now pushing toward a record high mark of $3 billion annually.

The Board's optimism was influenced greatly by the belief that a firmer trend is in the making for most building. Despite widespread talk of reductions in new plant and equipment expenditures by businessmen and shrinkage in new building by the federal government, the Board anticipates a

" . . . spending will be up sharply under the dynamically expanding population with growing

Economist predicts

continued . . .



great year in 1958; the total to be at the highest peak in history. Any reductions in new plant and equipment expenditures by business other than the rock products industry are expected to be more than offset by increased state, municipal and private construction in institutional building, commercial building, public utility construction and home building.

The upswing in home building should exceed eight percent over the 1957 level. Because of the sociological and political importance of home building, our Board anticipates further moves in 1958 by the government to stimulate this segment of the industry. It will be done through easier financing terms and increased credit. Total new construction in 1958 is estimated by the Board as likely to exceed an aggregate of $50 billion. If so, it will be the first time in the nation's history and will be a rise of nearly six percent over the previous record year 1957, when the total was $47.2 billion.

Construction figures are of prime significance in the projection of unsurpassed activity for the rock products industry in 1958, since the output of the rock products producer goes mostly to construction. Other basic economic factors have great meaning, since a dip in the entire economy would be expected to affect all the fundamental industries of the country, including rock products. However, the Board's thinking which follows gives encouragement to the rock products industry's optimistic sales potentials over the next 12 months.

"Engineered deflation," which had been pursued by the Federal Reserve Board in 1956 and most of 1957 was ended late in 1957. It became evident then that tight money was exerting a depressing influence on industrial production, inventory accumulation, car buying, home building and on the expansion of new plants and equipment in some industries. The difficulty of borrowing money was reflected in a sharp drop of business loans and a reduction in planning for expanded business.

As part of the inflation battle, the government began clamping down on some of its expenditures. It reasoned that less spending by government agencies would bring an inflation antidote. This too, caused some businessmen to fear possible re-

pressures of a requirements."

cession as did tight money. The Russian missile successes have forced our hand, and now, instead of federal spending as a whole being down several billion dollars it is more likely to be up at least one or two billion dollars, even if the debt ceiling must be raised.

Population boom and more housing

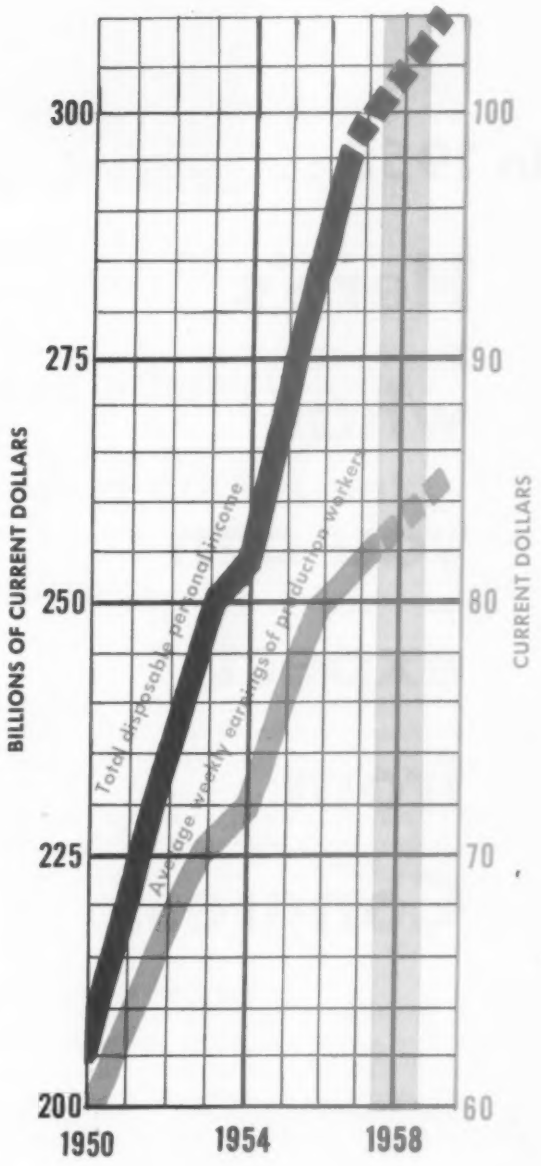
The basic stimulus for rising business is strong from the fast-expanding and industrious population. On Jan. 1, 1958 the total population of our country was about 172,600,000. This compares with 169,800,000 on Jan. 1, 1957; 166,805,000 on Jan. 1, 1956; 163,956,000 on Jan. 1, 1955 and 150,522,000 on Jan. 1, 1950. The increase in the full year 1957 alone is almost the equivalent of adding another Detroit, Cincinnati and Indianapolis to the national market! The year 1958 is expected to see another great jump in our population. This will help to maintain and expand a national market, and add to the pressures and needs for housing and new buildings.

The underlying demand for homes is much greater than many analysts realize. There is too much tendency to look only at immediate marriage totals and to compare them with new housing. There is a great backlog of married people whose housing demands have been unsatisfied for years and who have been saving persistantly toward the purchase of a new home.

This backlog developed since 1940 and is the accumulated pile-up of married couples without homes of their own. It has grown in each year since 1940 to the extent that it now exceeds 14,500,000 couples. Some of these couples, of course, have broken up through divorce, deaths and desertions, but even if a conservative half of the above cumulative difference were taken, there would still be over 7,000,000 couples not provided with new residences. Compare this potential market to the 1957 home building rate of less than 1,000,000.

Larger families, intensified trends to suburban living, 250,000 home demolitions annually, and eariler marriages add to the potential market for new homes.

"trend of wages is up"



Wages up, will probably rise more

The economy's strength is seen in the high level of employment and of disposable income. Despite some recent increase in unemployment, this is reflected in record high spending in the consumer service trades and in retail sales—both running substantially over last year. Weekly earnings in manufacturing is at a record high of $83, compared with $82.41 at this time last year and an average of $71.86 in 1954 and $23.86 in 1939.

Please turn to page 164

In 1958 . . .

Here's what you can expect from Congress

As Congress of proposed Here, briefly,

A HEAVY AGENDA of proposed legislation affecting rock products industries is scheduled for the second session of the 85th Congress. The session, until adjournment day, will have a strong flavor of partisan politics because this is a national election year. The 1958 elections will have a bearing in the 1960 presidential election.

Another economy drive in '58

Perhaps uppermost in the minds of business and industry and individuals is some relief from the heavy tax burden. There are likely to be many conflicting pro-and-con statements that will leave the American people thoroughly confused before Congress makes a final determination pertaining to tax cutting.

For years there has been an "emergency," either real or theoretical, and Congress and the party in power have cited the then pending crisis as an excuse. This year is no exception because of the Russian Sputnik and canine-carrying "moon." But despite the newest crisis, there is likely to be a determined effort by leaders of both parties to make a modest tax reduction.

While individuals will receive any tax reduction preference that Congress might make, small business is next in line. Pressure has been building up for months to give small business some relief. Last to be considered for any prospective relief will be big business. There were more than 2,000 tax relief bills of varying kinds and sizes introduced in 1957. They are still technically alive and pending before the House Ways and Means Committee.

The economy drive that had a fast start in the 1957 session only to bog down to some extent, will again mark the 1958 session. The tax reduction proposals will be reflected in the drive to reduce spending.

More road problems

A series of bills affecting the accelerated highway construction program will be considered. The new estimates submitted by the Bureau of Public Roads showing higher costs to build roads surprised no one. Prices of materials, services and freight rates have increased and are still rising. The cost of building the divided, multi-laned Inter-

By EDGAR POE

settles back to work, it faces a heavy load legislation affecting the rock products field. is a rundown on that legislation

state System is substantially larger than was originally projected.

The 13-year federal authorizations of $25 billion written into the present law will not provide sufficient funds to build an expanded program or possibly carry out the total 41,000-mile program authorized in 1956. Congress may consider extending the 13-year money authorizations to 16 years.

The question of possible federal reimbursement to the states for the already completed 2,100 miles of toll roads, and 4,000 miles of free roads constructed to the standards of the Interstate System and now a part of it, will be before Congress. There is some movement to make the toll roads free because they are incorporated into the Interstate System.

Senator Harry F. Byrd of Virginia, chairman of the Senate Finance Committee, said he will vigorously oppose any proposal that might call for an accelerated road program other than on a pay-as-you-go basis. He authored the amendment to the 1956 Highway Act that provided for a pay-as-you-go program.

Representative Hale Boggs of Louisiana, member of the House Ways and Means Committee, said he will again oppose "money raids" that might be directed on the Highway Trust Fund. He led a fight in the House against taking money out of the fund and making it available to the Department of Labor for enforcement of the Davis-Bacon wage-determination provisions. Under these provisions, a highway contractor must pay the minimum wage to labor. The Labor Department determines what the prevailing wage scale is in that immediate area.

Representative Boggs maintains that if the Labor Department could take money from the Fund, (it got $200,000 out of the $350,000 it sought) other Federal departments and bureaus could make similar raids.

Union bills in the hopper

Disclosures of widespread racketeering by some of the big chieftains of labor unions will result in consideration of several bills designed to curb powers and throw more light on union activities. Perhaps the measures will mean extensive hearings.

Two pieces of legislation introduced in 1957 are now pending. One would require the registration, detailed reporting and public disclosure of the financial operation of employe pension and welfare funds. The American workers have a huge stake in proper operation of those funds because they have put more than $30 billion of their own money into them.

The other is a joint resolution which the Senate passed at the 1957 session, but the House did not get around to. This measure would permit the Secretary of Labor to make public the union financial reports now made to the Department of Labor under provisions of the 1947 Taft-Hartley Act.

Both of these measures appear to have a good

More social security benefits and upping the minimum wage also will be considered

Legislation in 1958

continued . . .

chance of becoming law. The Eisenhower Administration is also advocating legislation that would guarantee a free, secret election of union officers no less than once every four years. The theory is that a secret ballot is the strongest weapon against the tyranny of corrupt union officials.

The Eisenhower Administration is also advocating passage of legislation outlawing "blackmail picketing," without restricting legitimate picketing. Some unions are now going so far as to use the picket line to force an employer and his employes to join a union when in reality they have opposed unionization.

Senator John L. McClellan, (D., Ark.) chairman of the Senate Select Committee on Labor and Management, is confident that Congress will get a right-to-work bill, and another that would subject unions, like management, to the Sherman anti-monopoly laws. Both proposals appear likely to evoke a storm of opposition. Senator McClellan's committee has turned up widespread evidence of union misdeeds, and of some highly unethical practices by management.

The Department of Labor reports that there are now 18,500,000 people belonging to American labor unions, and the number is growing. About 1,000,000 of the total, mostly Canadians, live outside the country. The AFL-CIO has become a great power in the United States. The unions have been responsible for electing a number of members of Congress.

A federal right-to-work measure would kick up more opposition than any single proposal. Unions maintain that a right-to-work law is mis-named, contending such laws are union busting laws. Eighteen states, most of them in the South, have right-to-work statutes on their law books.

Construction

The House Public Works Committee has before it a measure that would authorize a direct appropriation of $766,995,994 for 98 federal buildings which Congress has approved. The authorized buildings are supposed to be built under the so-called lease-purchase act. However, the construction program floundered so badly for lack of private funds that Congress let it expire last July. The program is still lagging. The federal buildings already authorized were unaffected.

Under lease-purchase program, the Government pays for the buildings like rent. Investors have not been enthusiastic about putting up four percent money for long range investment when they can obtain higher interest rate on shorter loans.

Like it has each year since World War II, Congress probably will again pass Housing legislation. A GI loan program will likely be one of the proposals to be considered. More than 5,000,000 veterans have built homes under the GI provisions since 1945. The program badly lagged during 1957 because Congress refused to lift the 4½ percent ceiling on the loans.

President Eisenhower vetoed a 1957 legislative act that would have provided money for direct Government loans to veterans living in rural areas. The Chief Executive said the proposal discriminated against city veterans and was inflationary and did not provide a fair interest rate in view of the current interest rates.

Another scrap may be looming over a proposal to provide federal aid for public school construction. However, the odds are against passage of any such legislation. The segregation issue will be stronger than ever. Furthermore, most states feel that they can supply their own school needs.

More social security benefits

A series of bills are pending to further liberalize social security. Because it involves taxes, social security legislation must originate before the House Ways and Means Committee.

Representative Aime J. Forand, (D., R.I.), a member of the committee, introduced one of the proposals, which has the support of the AFL-CIO. The Forand bill would do these things: Increase

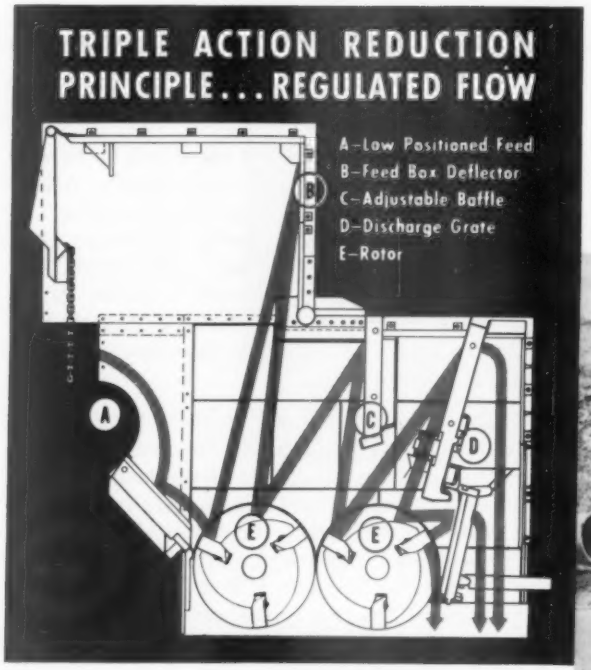
Please turn to page 166

HIGHER reduction ratios

THE KENNEDY CUBER SENIOR

uses a new, proven concept in impact breaking

...for stationary or portable use



This heavy duty impact breaker is designed for primary and secondary breaking of non-abrasive stone and similar materials in a single unit. It is a dual rotor, up-running breaker featuring a multi-stage, triple action reduction principle and regulated flow.

Two Cuber Seniors in service at a Pennsylvania cement plant, operating as secondaries in a closed circuit, producing raw mill feed. The Cuber Senior can also be used as a portable unit.

THE KENNEDY CUBER SENIOR

- delivers high capacities of cubical material at lower cost —with lower horsepower per ton
- handles quarry rock that will pass its feed opening
- can be operated in a closed circuit to produce 100% passing 1" with many types of rock
- has a low positioned feed device that lowers feed height for maximum rock penetration into impact zone
- can be used as a stationary or a portable unit
- can accommodate differing characteristics of various rock types with its adjustable baffle and variable speed

We invite you to send for Bulletin D-1003 describing the Cuber Senior, and to have your material tested by KVS with no obligation to you.

KENNEDY • VAN SAUN

MANUFACTURING & ENGINEERING CORPORATION

TWO PARK AVENUE, NEW YORK 16, N.Y. • FACTORY: DANVILLE, PA.

Enter 1549 on Reader Card

Don't miss the February shows—

Here's a preview of

YOU CAN'T AFFORD to stay away from Chicago the two middle weeks of February—it's convention and show time.

The largest and most spectacular Combined Biennial Convention and Show of the National Sand and Gravel Association and National Ready Mixed Concrete Association is coming to town February 10-13. Following closely on its heels, the 41st annual Convention and Show of the National Crushed Stone Association will be held one week later—February 17-19. This, too, will be the biggest the industry has had to date.

To attend these conventions and shows is a rare opportunity—and it's yours for the asking. The industries, the associations and manufacturers have pooled their resources in a grand effort to give you exactly what you want—information to help you in your business.

In Chicago, you'll be able to catch up on two years of progress—and much has happened in two years. You'll hear solid, important discussions of major industry problems by individuals who are in a position to give you the facts through their own practical experience. You'll have an opportunity to see what's new in equipment, supplies and methods, and to talk with the men who helped develop these items.

One big show at two locations—that's what the NSGA-NRMCA program offers you. The Chicago Coliseum will be packed with equipment. And exhibit space in the Conrad-Hilton Hotel will be jammed too. Because of the unusual opportunity afforded those in attendance, the Associations have decided that Monday and Tuesday and Wednesday afternoon, February 10, 11 and 12 will be dedicated entirely to inspection of the show at both locations. Industry progress is accented in these exhibits and here you'll see, for the first time, equipment that never before has been exhibited to the industries. For your convenience, most of these items are covered in a separate section of this presentation.

Convention sessions of the combined meeting will begin Wednesday morning, February 12. They'll continue all day Thursday and at least run through Friday morning. You'll find the complete convention program, as of publication date, in this section. As usual, the traditional joint luncheon with its outstanding guest speaker Dr. Joseph Kaplan, chairman of the United States National Committee for the International Geophysical Year, will be a highlight of the 1958 meeting. Dr. Kaplan's talk will be "Man Looks at a Small Planet."

The NCSA Convention and Show will be held in the Conrad Hilton the week of February 16, and those who are interested may want to spend the intervening week-end sightseeing in Chicago. Others, we're sure, will be flocking to the city at that time to get set for the big week to come. As an indicator of interest in this convention and show we're told that exhibit space this year was at a premium.

The program, as arranged by the NCSA, is well-rounded—one that is sure to give you plenty of ideas that you can use in your own business.

Monday afternoon and Wednesday morning of that week will be given over completely to an inspection of manufacturers' exhibits. The convention program begins with a business session Monday, followed by two important problem-solving talks. You'll be entertained, too, by a special speaker at the greeting luncheon that noon.

The full convention program is included on the following pages. It is highlighted by a down-to-earth practical session on Tuesday morning, a panel meeting the same morning during which federal regulations affecting your industry will be discussed and a well-rounded Wednesday afternoon session.

On these and the following pages we have tried to give you as much of a preview of these important February activities as we can. This has been done in the interest of industry progress, with a feeling that you'll want to take advantage of the opportunities these important meetings will present. Take time to look over these pages and to preplan your activities at the conventions. We think that way you'll see a lot more, and get a lot more out of all three shows. See you in Chicago in February.

what you'll hear and see

A bustling scene of activity like this will dominate this year's conventions and expositions

Sand and Gravel, Ready-mix associations programs

Wednesday, February 12

Morning Session, Starting at 9:30 a.m.
Session 1; Simultaneous with Session 2
Waldorf Room

National Sand and Gravel Association

Presiding Officer—Roy E. Weaver

Address of the President, Mr. Weaver, Lincoln, Ill.

"The Public Relations Program of the Sand and Gravel Industry Moves Ahead"—E. K. Davison will present the new film on land restoration, produced by the American Aggregates Corporation, Greenville, Ohio

"How Do Zoning Boards Get Their Power; How Do They Use It?"—Richard E. Hole, Attorney-at-Law, Greenville, Ohio

"Severance Taxes"—Harold M. Lacy, Dallas Concrete Co., Dallas, Texas

"Is Sand and Gravel Transportation by Railroad Beginning to be Only a Memory?"—Ellis E. Jensen, Janesville Sand & Gravel Co., Janesville, Wis.

Election of Officers, Safety Trophy Awards

Wednesday, February 12

Morning Session, Starting at 9:30 a.m.
Session 2; Simultaneous with Session 1
Williford Room

National Ready Mixed Concrete Association

Presiding Officer—John W. Roberts

Address of President, Mr. Roberts, Richmond, Va.

"Selling More Ready Mixed Concrete Through Sales Promotion"—George H. Paris, Portland Cement Association, Chicago, Ill.

Please turn to page 102

Are you caught between INCREASED PRODUCTION DEMANDS

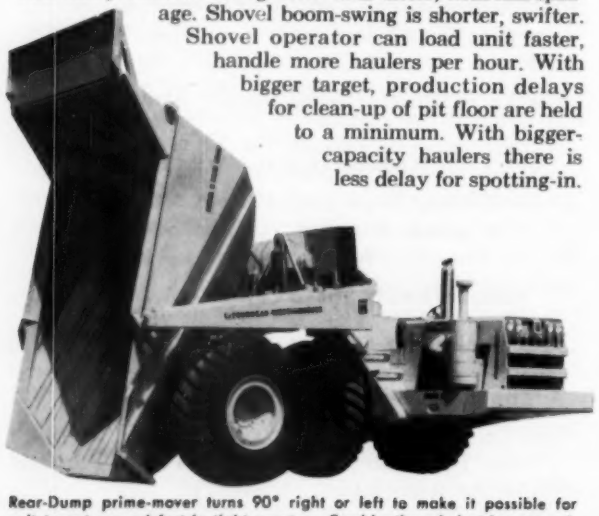
In the past decade, production in the cement and aggregates industries has gone up 50%, due to vastly increased demand. With the big road program ahead . . . plus continued high levels of both industrial and home building forced by population increases . . . you will be faced with a need for still greater production growth over the years ahead. As the product demand increases, you must also face a continuation of increases in labor costs . . . in wages; in probability of shorter work periods; in further loss of labor productivity. • To maintain a favorable profit ratio . . . and to have enough retained capital for expansion of production, for financing increased sales volume, and for meeting heavier payrolls . . . you have only three possible sources. These are to increase prices, increase production efficiency, and extend modern mechanization. • Price raises are only

Here is a rugged 35-ton Rear-Dump that may help you reduce pit production costs and increase capacity

Take a minute, right now, and compare your present haulers with this big, smooth-dumping, easy-to-load 35-ton LeTourneau-Westinghouse Tournapull® Rear-Dump. Analyze its economy in meeting your need for increased production at low cost. If your pit operations are expanding, and if you are still using smaller-capacity haulers, consider what 2 to 3 times more capacity per load would mean in extra tons moved per day! Also, if you are considering the purchase of a larger shovel, within the next year or two, study the advisability of first getting your bigger capacity haulers. Remember, you can lower costs with larger haulers, and present shovels . . . but a larger shovel with your present haul-fleet is not likely to prove economical.

With the LeTourneau-Westinghouse 35-ton Rear-Dump you not only get BIG capacity loads but also higher production efficiency through all these L-W features:

Faster loading — Wide bowl (10′2″ x 15′4″) with low, rear entry makes loading easier and faster, with less spillage. Shovel boom-swing is shorter, swifter. Shovel operator can load unit faster, handle more haulers per hour. With bigger target, production delays for clean-up of pit floor are held to a minimum. With bigger-capacity haulers there is less delay for spotting-in.



Rear-Dump prime-mover turns 90° right or left to make it possible for unit to get around fast in tight quarters. Combination of electric-powered, geared kingpin, and front-wheel drive enables prime-mover to pivot-turn and "walk" unit out of soft spots.

Simple, safe dump action — A touch of electric switch on dashboard instantly activates point-of-action body-hoist motor. Entire dump is under power control — up and down. There's no delay for hydraulic pressure build-up; no body shocks — as with gravity dumping. With front-wheel drive, unit always maintains safety margin for quick pull-away on soft dumps.

Greater maneuverability — Positive electric power steer, through geared kingpin, permits prime-mover to pivot at right angles for short 90° turns. This makes it possible for unit to make continuous U-turns in less space than Rear-Dump's own length. In dump position, it turns in only about ⅔ of overall length! As a result, Rear-Dump can spot faster at the shovel, dump faster, and get away faster from pit, dump, or grizzly.

Hauls anywhere — Rear-Dump's power-transfer differential automatically applies up to 80% of power to drive-wheel on firmer footing, to pull unit through muck, sand, and slippery footing which stops ordinary haulers. Also, Rear-Dump is equipped with big, single, low-pressure tires for best flotation and traction. Tires adequately absorb the shock of rough off-road travel, and are interchangeable all around. You have none of the wedge-rock tire-wear common with duals.

Low maintenance — Simple construction . . . no hydraulics or jack lines, no long drive shaft . . . no frame, subframe, springs, or tie-rods . . . cuts downtime for maintenance and repairs. Slanting walls of all-steel body, plus heavy 3-layer bottom, beat shock-load problems.

Ask for full details — Find out how this big, 35-ton Tournapull Rear-Dump can help you keep up with the demand for increased production, and permit you to make more profit in spite of rising costs. Choice of 300 hp engine on standard transmission . . . or 335 hp with automatic torque-converter transmission.

For smaller pits, 11 and 22-ton LeTourneau-Westinghouse Rear-Dumps are available, with the same basic design features. Write or call for all the facts.

BR-1630-Q-2

and SHORT PROFIT MARGINS?

a limited answer because they encourage production from marginal pits and the use of substitute materials. You have probably already studied carefully and fully developed your opportunities for streamlining production efficiency. Mechanization in processing equipment has probably already been pretty well applied in your plant — as it has with most of your competition. There is, however, one part of your operation where most producers can still cut costs. That is in the modernizing of your pit operations. • We suggest that you take a good look at your *hauling* fleet. Consider larger-capacity units — haulers that can increase your production, and lower operating and maintenance costs per ton.

Wide bowl provides easy target for shovel operator . . . speeds loading, minimizes spillage.

At dump, operator flicks switch to activate hoist motor which lifts body quickly. Body swings below and behind rear wheels, to dump load cleanly over bank.

LETOURNEAU-WESTINGHOUSE COMPANY, PEORIA, ILLINOIS

A Subsidiary of Westinghouse Air Brake Company

Where quality is a habit

Sand, gravel program

continued from page 99

"Community Good Will is Essential to Survival of the Ready Mixed Concrete Industry"—Ralph H. Anderson, Committee on Public Relations

Paper on Cement Tests—Stanton Walker, Director of Engineering

Election of Officers, Safety Trophy Awards

Wednesday, February 12
Grand Ballroom

National Sand and Gravel Association
National Ready Mixed Concrete Association
Presiding Officer—John W. Roberts

12:30 p.m.—Joint Luncheon
"Man Looks at a Small Planet"—Address by Dr. Joseph Kaplan, Chairman, U. S. National Committee for the International Geophysical Year

Wednesday Afternoon, February 12

Starting at 2:30 p.m.
Waldorf Room

Conference on the NRMCA-NSGA Group Insurance Plan and Retirement Plan
Presiding Officer—William Moore

"How the NRMCA-NSGA Group Insurance Plan Works"—Kenneth E. Tobin, Jr., Associate Executive Secretary

"The New Major Medical Benefits Provided for in the Group Insurance Plan"—Jermain B. Porter, John Hancock Mutual Life Insurance Co.

"The New NSGA-NRMCA Retirement Program for Officers and Employees of Active and Associate Member Companies"—Donald Shepherd, Plan Consultant, Quincy, Mass.

Thursday, February 13

Morning Session, Starting at 9:30 a.m.
Session 3, Simultaneous with Session 4
Waldorf Room

National Sand and Gravel Association
National Ready Mixed Concrete Association
Presiding Officer—E. Phil Gemmer

"Recent Tax Developments Affecting Sand and Gravel and Ready Mixed Concrete Producers"—John T. Sapienza, Counsel for Associations.

Problems of Industry Management

Informal discussion of the problems which confront industry management in the sand and gravel and ready-mixed concrete industries, including depreciation schedules and establishment of salvage values; Treasury regulations on expense account allowances; percentage depletion deductions; the 3 percent tax on the transportation of property for hire; cost determination and cost management; adequate insurance protection.

Mr. Sapienza

Eugene J. Walter J. K. Davison & Bro.	John W. Murphy Union Sand, Gravel Co.
Henry H. Kirwin Eastern Rock Products, Inc.	J. H. Reid Consolidated Sand and Gravel Ltd.

Thursday, February 13

Afternoon Session, Starting at 2:00 p.m.
Session 5; Simultaneous with Session 6
Grand Ballroom

National Sand and Gravel Association
National Ready Mixed Concrete Association
Presiding Officer—M. Eugene Sundt

"Mobile Radio Problems: Crowded Frequencies, Eligibility Restrictions and Proposed Solutions"—Ernest W. Jennes, Washington, D.C.

"The Interstate Highway Program Moves Ahead"—Frank H. Turner, Deputy Commissioner and Chief Engineer, U. S. Bureau of Public Roads

"How Much Business Will There Be for the Sand and Gravel and Ready Mixed Concrete Industries in 1958? What Happened in 1957?"

C. G. Cooley Cooley Gravel Company	Herbert G. Jahncke Jahncke Service, Inc.
Norman J. Fredericks Koenig Coal & Supply Co.	E. J. Nunan Buffalo Slag Co., Inc.
Richard K. Humphries Pacific Cement & Aggregates, Inc.	J. L. Shiely, Jr. J. L. Shiely Company

Friday, February 14

Morning Session, Starting at 9:30 a.m.
Session 7; Simultaneous with Session 8
Grand Ballroom

National Sand and Gravel Association
National Ready Mixed Concrete Association
Presiding Officer—F. E. Schouweiler

"Recent Labor Board and Court Developments in Group Bargaining by Employers; Illegal Picketing and Secondary Boycotts"—Charles A. Horsky, Associations Counsel, Washington, D.C.

"Economic Factors Involved in Anniversary Wage Increases or Application of the Cost-of-Living Index"—Ewan Clague, Commissioner of Labor Statistics, Washington, D.C.

"The McClellan Investigation"—V. P. Ahearn

Please turn to page 120

How 1 tractor handles all clean-up around fleet of scattered shovels

At this large open-pit copper mine in Arizona, copper is produced from huge tonnages of rock and ore that are mined each day. Equipped with Angledozer and tilt mechanism, 210 hp Tournatractor makes quick work of clearing shovel-spillage from railroad tracks.

A large open-pit copper mine in Arizona uses only one tractor for all clean-up around their widely scattered production shovels. It is the 210 hp rubber-tired LeTourneau-Westinghouse Tournatractor®. Here's how this 17 mph tractor operates during a typical 8 hour day:

Averages 10 min. per shovel

When the 6-yd. shovels have completed loading a string of ten to twelve 84-ton capacity rail-cars, Tournatractor drives in and goes to work. Straddling the rails, this rubber-tired tractor efficiently dozes shovel spillage off tracks with its Angledozer* blade. At each shovel, speedy Tournatractor cleans-up loading area and railroad track in about 10 minutes!

Takes shortest route to next location

When each assignment is finished, Tournatractor operator just flips instant-shift lever and he's on his way to the next shovel. There are no delays for crawling or load-and-haul to new location. A mile is only a couple minutes away! Tournatractor always takes the shortest, fastest route to the next work location . . . often "runs" down steep "shot" banks to lower benches. Big, low-pressure tires do not damage air-drill hose lines, RR tracks, ties, switches, or haul road surfacing.

"You can't beat Tournatractor"

Handling all clean-up work for the shovels . . . plus completing numerous scattered maintenance jobs during his 8 hour shift . . . Tournatractor operator said, "You can't beat this tractor for clean-up work. This is the place for rubber . . . I can move around faster than a pick-up truck on some of our benches."

For more information

If you use several crawler-tractors for clean-up at your pit, plant, and stockpiles, investigate how Tournatractor's power . . . traction . . . speed . . . and "go-anywhere" mobility can pay off for you. We'll be glad to demonstrate Tournatractor at your pit . . . let you judge for yourself.

*Trademark CT-1482-M-1

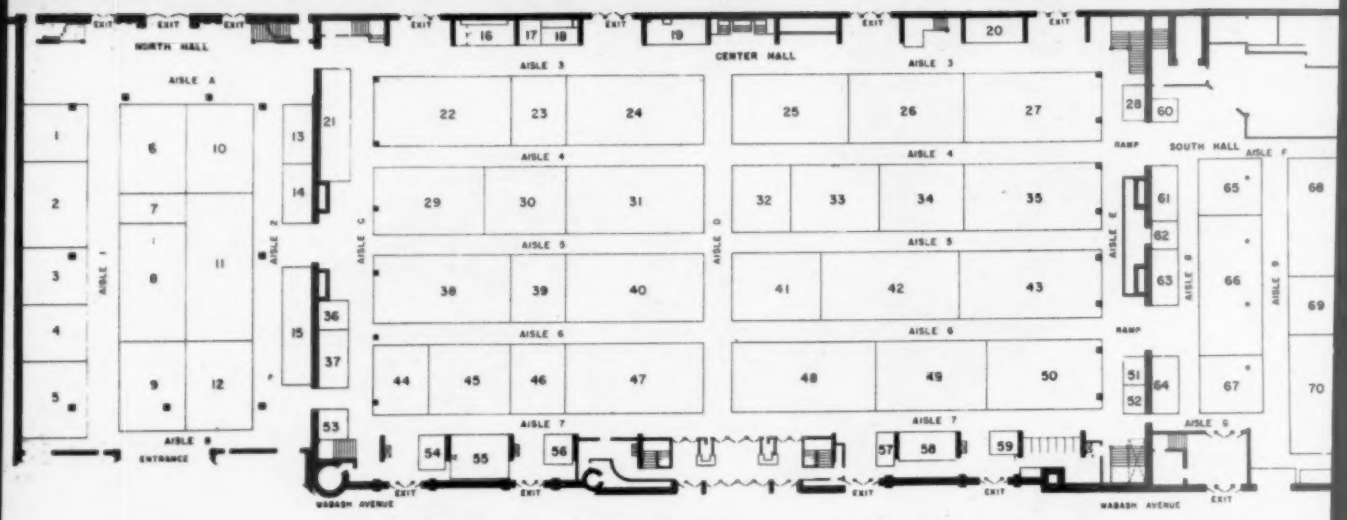
Go-anywhere Tournatractor "runs" down a "shot" bank to shorten travel time between shovels. With big, multi-disc air brakes — totaling 3,762 sq. in. of brake surface — operator has sure, safe control at all times.

Crossing tracks, Tournatractor's big, low-pressure tires deflect to prevent damage. They do not loosen rails, damage ties or switches.

LeTOURNEAU-WESTINGHOUSE COMPANY, PEORIA, ILLINOIS

A Subsidiary of Westinghouse Air Brake Company

Where quality is a habit



FLOOR PLAN OF BOOTHS AT THE COLISEUM

Booth by booth . . .

Here's what to look for at the shows

Editors' Note: Information contained in these listings is that received from manufacturers who are exhibiting at the February Shows, and that received up to the last minute before publication deadline. Late changes in exhibits, and other factors, may cause unavoidable discrepancies in information presented.

National Sand and Gravel Assn.
National Ready Mixed Concrete Assn.

COLISEUM

Allis-Chalmers Mfg. Co.—Booths 48-49. Models of latest types of crushing and screening equipment. R. N. Brown in charge.

American Hoist & Derrick Co.—Booth 33.

Barber-Greene Co.—Booth 26. Belt conveyor section, equipped with standard and self-aligning carriers, impact carriers, chevron and rubber-tired return rolls. Model 430 vibrating feeder with 8-ft. hopper. Duo-Screen, for handling difficult materials. H. W. Newton in charge.

Blaw-Knox Co.—Booth 50. Mounted and unmounted FE-PTO mixers. Mounted 6-cu. yd. unit has complete water system. Model display of elastic fractionation system to illustrate theory of process. Model of new design for ready-mix plants. George W. Moritz in charge.

L. Burmeister Div., Chain Belt Co.—Booth 55. Automation in ready-mix concrete batching. Display features fully automatic control batching panel, with backdrop of animated section of Porto-Plant Model 125. Porto-Plant Model 60, featuring capacity from 40 to 60 cu. yd. per hour with portability of two-wheel trailer.

Butler Bin Co.—Booth 23.

Caterpillar Tractor Co.—Booth 38. Industrial power and materials handling equipment. New D337 (Series F) electrical and mechanical drive unit for crushers. Gives mechanical energy for crushers and electricity for flexible control of conveyors. Gyrodozer—No. 7G bulldozer mounted on D7 tractor. No. 955 Traxcavator, equipped with side dump bucket. Translite exhibits of other equipment in action. Raymond F. Mueller in charge.

Chain Belt Co.—Booth 42. 1958 REX Adjusta-Wate Moto-Mixers, 5 and 6-cu. yd. sizes, mounted and unmounted. Larger mounted unit has front engine power take-off unit with air-pressure water system. J. A. Chojnacki in charge.

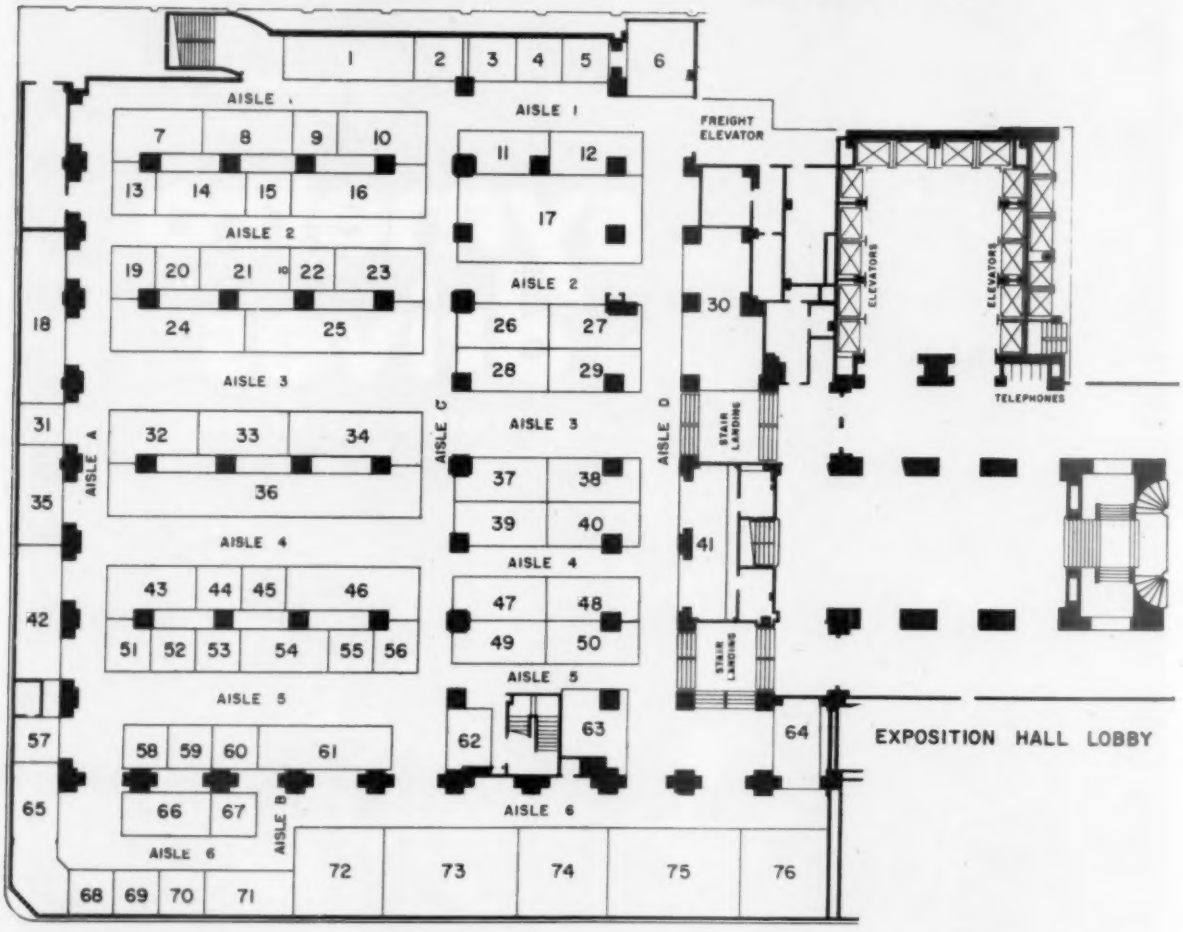
Clark Equipment Co., Construction Machinery Division — Booth 11. Film called "Bonus Buckets," on application and use of tractor shovels. Two machines: 6-cu. yd. rubber-tired "Michigan" Model 375 tractor shovel, and 262-hp. rubber-tired "Michigan" Model 280 tractor dozer. Joseph L. Dorfler in charge.

Columbia-Southern Chemical Corp.—Booth 59.

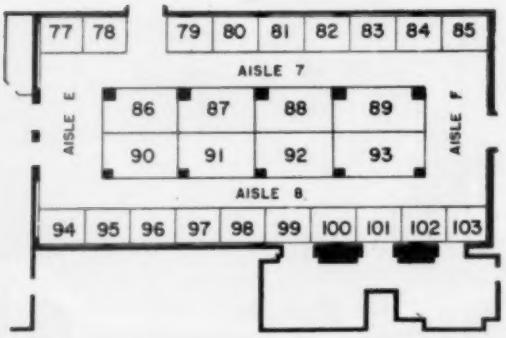
Concrete Transport Mixer Co.—Booths 16-46. New 7-cu. yd. ROCKET truck mixer on B-42 Mack. Also, 5-cu. yd. ROCKET on Chevrolet tandem-axle chassis. For larger operator, 6-cu. yd. ROCKET with front-engine drive from truck engine. Fred Rechsteiner in charge.

(Continued on page 106)

FLOOR PLAN OF BOOTHS AT CONRAD HILTON HOTEL



SOUTH EXPOSITION HALL



NORTH EXPOSITION HALL

Construction Machinery Co.—Booth 24. Feature TRANSCRETE mixer with a new approach to truck mixer design. Other mixers shown will have separate engine and front-end power takeoff. Supplemented by working model displays simulating actual on-the-job performance of floating drive and swing-out hopper. Glenn A. Larsen in charge.

Continental Motors Corp.—Booth 64. Gasoline and diesel engines, three on display. Display of service parts, with emphasis on world-wide coverage. C. W. Johnson, C. M. Bellinger in charge.

Cook Bros. Equipment Co.—Booth 29. Three "Challenge" truck mixers: conventional 4-cu. yd. and 6-cu. yd. and ETO 7-cu. yd. with engine take-off drive. New improvements over previous models. Brand new "Challenge" Instant Trowel Model F-48 42 in. concrete finisher, featuring safety features and rugged construction. C. W. Tilden and Wm. L. Walsh in charge.

Crane Carrier Corp.—Booth 70

Cummins Engine Co.—Booth 5. Five diesel engines, of which two are new models, from 75 to 600 hp.

(Continued on page 108)

POLYSIUS GMBH.
NEUBECKUM WESTPHALIA
WESTERN GERMANY

POLYSIUS Ltd.
THE BRACKENS
ASCOT. BERKS

POLYSIUS S.A.R.L.
REPRÉSENTATION POUR LA FRANCE
ET LA BELGIQUE RUE AUBER PARIS IXe

CONVENTION AND SHOW PREVIEW.

New V-8 engine features higher horsepower with lighter weight, simple design and fuel economy. J. D. Gatten in charge.

Diamond Iron Works — Booth 20. Comfortable booth with backboard and display of current literature covering products manufactured. Carl E. Hanson in charge.

Dodge Div., Chrysler Corp.—Booth 47. T-900 truck with Challenge mixer mounted on it. Conrad Vaughan in charge.

Eagle Iron Works—Booth 25. Portable washing-classifying-dehydrating section for aggregate plants, installed so that spectators can see all parts of the unit; posters will point up features. New HMS plant will be highlighted; slides will show machine on the job. C. B. Laird in charge.

Erie Strayer Co.—Booth 39. Roger Strayer in charge.

Euclid Div., General Motors Corp.—Booth 2. TC-12 crawler tractor. R. E. Keidel in charge.

Ford Div., Ford Motor Co., Fleet Sales Dept.—Booth 66. Four extra-heavy-duty trucks T-950, F-1000, CT-850 and T-700. Five engine displays, including three new heavy-duty Ford engines not previously available. A. C. Scott in charge.

Flexible Steel Lacing Co.—Booth 37. Various belt fasteners on a 20-ft. 24-in. inclined belt conveyor. Three new items displayed and demonstrated; Far-Pul Belt Clamps, Rema Rubber Cleats, Flexco Power Tools. Fred Benson in charge.

Ford Motor Co., Tractor & Implement Div.—Booth 65.

The Four Wheel Drive Auto Co.—Booth 3. Four-axle truck with driving power to front axle of a front tandem as well as to both axles of a rear tandem. Concrete carrying loads up to 10 cu. yd.; features tilt cab styling; Model C86-707. Two additional ready-mix trucks: Model C6-407, six-wheel drive, with 6-cu. yd. mixer; Model C6-557, six-wheel drive, with 7-cu. yd. mixer. Arthur J. Laack in charge.

GMC Truck & Coach Div., General Motors Corp.—Booth 22.

The Heltzel Steel Form & Iron Co.—Booth 41. New portable-type batching plant that includes new developments in batching equipment. Designed for erection time of one hour, unit will have capacity of batching 50 cu. yd. of concrete per hr., operated by one man. Material handling components built in. Harold C. Wetzel in charge.

Hercules-Galion Products Co.

Hercules Motors Corp.—Booth 21. Model DD-169, largest of three bore sizes in three-cylinder series; rated at 46 hp. at top operating speed on 2,000 rpm. DD-226 and DD-339 models of direct-injection diesels, largest bore sizes in 4 and 6 cyl. series. Also, Model IXB, 4-cyl. gasoline engine.

International Harvester Co. — Booth 43. Model 95 Payhauler. Scale model of Drott 4-in-1 unit, plus cutaway models of two or three stationary engines. Also, VF-190 truck with mixer.

The Jaeger Machine Co.—Booth 40. Central feature of display will be full-scale animated truck-mixer power-package driving mechanism and drum head. Highlighted is the 1958 line, including Model 7F 7-cu. yd. unit with separate engine drive, three-speed transmission and improved mechanism for perfect control. Also, Model 6F 6-cu. yd. mixer with front of engine power take-off, mounted on Mack B43SW truck. Submersible sump pump also featured. A. C. Thomas in charge.

The Jeffrey Manufacturing Co.—Booth 53. Highlight heavy-duty sand and gravel jig, for removing foreign materials from sand and gravel. Feature a blow-up cross-sectional view of jig, to point out features and explain advantages. Byron Bird in charge.

The C. S. Johnson Co.—Booth 30. ECONOPLANT—a complete batching-plant facility. Has three aggregate compartments of 45 cu. yd. capacity and one 70-bbl. cement compartment. Large top openings, all-welded fabrication of bin structure. Has manually operated Johnson Concentric Batcher. E. J. Goes in charge.

Koehring Div., Koehring Co.—Booth 30. Feature 1-cu. yd. Model 405 shovel, and DUMPTOR, an off-road instant-dump hauling unit. E. J. Goes in charge.

Link-Belt Co.—Booth 8. Newly designed 6x16-ft. double-deck vibrating screen, a Pre-Bilt sectional belt conveyor in operation on 36-ft. centers, and other materials handling and mechanical power transmission components.

Link-Belt Speeder Corp.—Booth 9. Upper and lower machinery used in shovels, draglines and clamshells. Also, operating model of Speeder power hydraulic control system.

Littleford Bros., Inc. — Booth 63. "Kwik-Steam" vapor generator, produces steam in 2 min. from cold start. Automatically controlled. Model 900. Roy P. Meier in charge.

Mack Trucks, Inc.—Booth 27. Complete line of latest type construction vehicles. Wide range of mixers, including both gasoline and diesel engine models containing advance Balanced Bodies and multi-speed transmissions. Display models of exploded, operating gas and diesel engines, 10 and 20-speed transmissions, Power Divider Differential, and off-highway type torque converters. A. G. Crockett in charge.

Manitowoc Engineering Corp.—Booth 58. Display of enlarged photos, diagrams and charts to show application of equipment to sand and gravel industry. Elmer Fors in charge.

Meckum Engineering, Inc.—Booth 14. Full sized semi-rubber lined dredge and material handling pump. Model will show pump action. Also, a model that demonstrates action of the Meckum sand and gravel jig; actual separation of materials can be seen. Photos of pumps, jigs and screens. Harry C. Troup in charge.

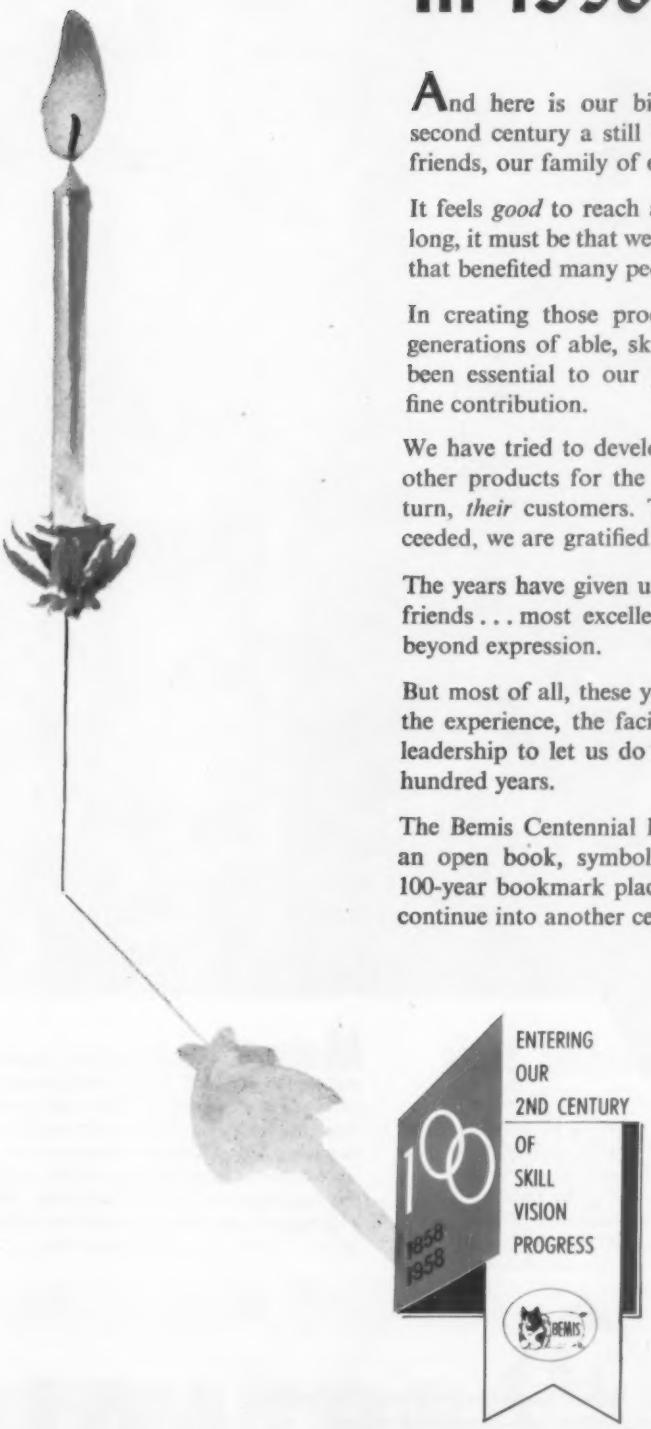
Monarch Road Machinery Co.—Booth 13. Working models of complete line of Monarch DYNA-CHUTE hydraulic controls for ready-mix trucks. Edward W. Jackoboice in charge.

Morris Machine Works

Murphy Diesel Co.—Booth 15. Diesel Mech-Elec Power Unit, plus various cut-aways showing engine design and construction features.

(Continued on page 112)

We are 100 years old in 1958



And here is our birthday resolution: To make our second century a still better one for our customers, our friends, our family of employees and our company.

It feels *good* to reach a hundred. To live and grow that long, it must be that we have created products and services that benefited many people.

In creating those products, we have had the help of generations of able, skilled Bemis employees. They have been essential to our progress and we appreciate their fine contribution.

We have tried to develop and make *better* packages and other products for the benefit of our customers, and in turn, *their* customers. To whatever extent we have succeeded, we are gratified.

The years have given us opportunity to make uncounted friends . . . most excellent friends . . . and these we prize beyond expression.

But most of all, these years have permitted us to develop the experience, the facilities, the talented personnel, the leadership to let us do an even better job in the second hundred years.

The Bemis Centennial Emblem represents this aim. It is an open book, symbolizing the story of Bemis . . . the 100-year bookmark placed to indicate that the story will continue into another century of service.

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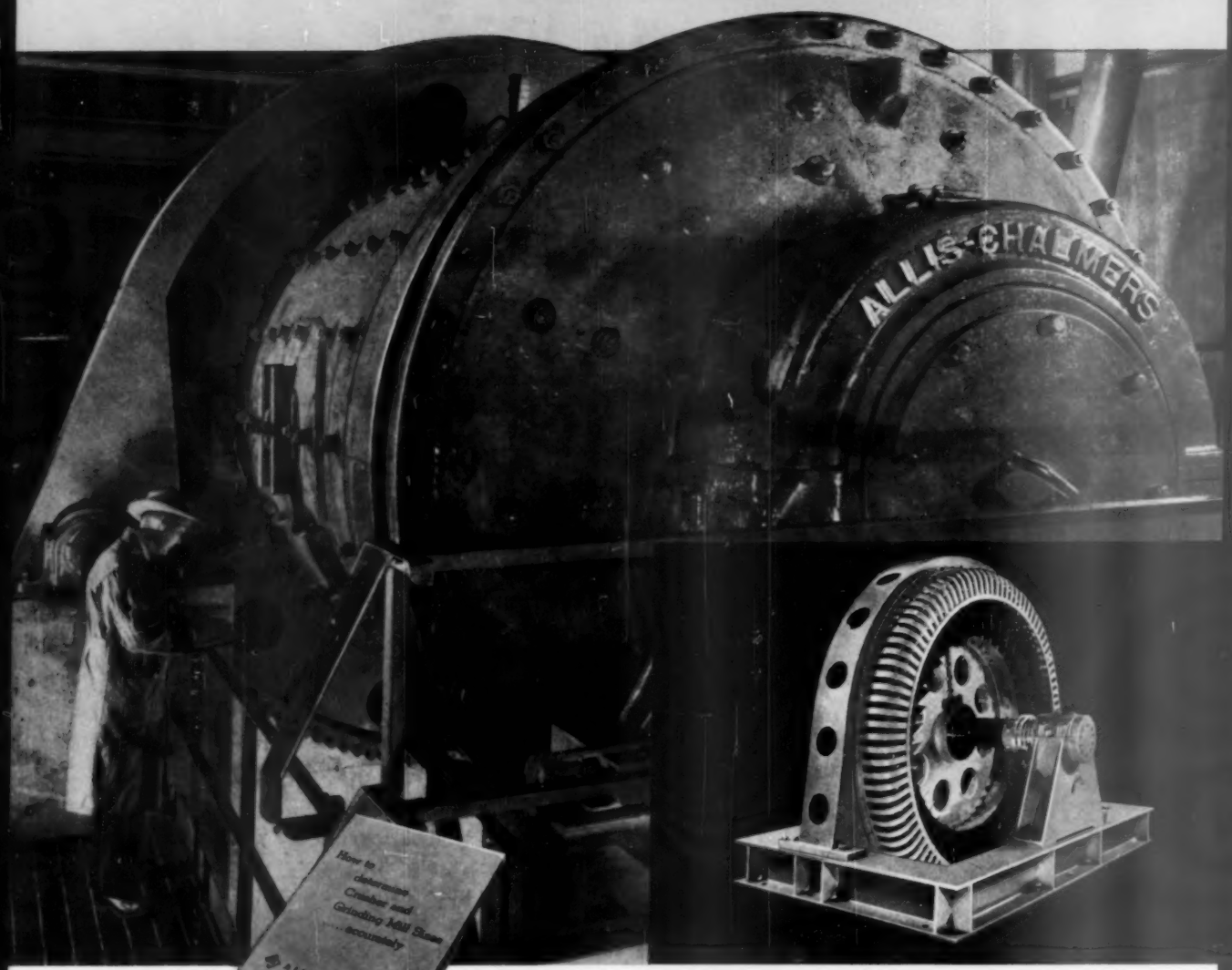

Send for Your Copy

This bulletin with its explanation of the "work index" formula enables you to evaluate any crushing or grinding operation . . . . compare efficiencies of plants, circuits, and machines. Write for this valuable reference. It offers the only truly scientific method of determining the right machine — the only scientific approach to maximum production at lowest cost. Ask for Bulletin 07R7995. Individual bulletins covering specific equipment are also available.

Motors — Should a totally-enclosed or an open-type motor be applied? Is a synchronous motor needed for power factor correction? The right answers to these questions are important to you. By applying the "work index" formula, Allis-Chalmers engineers can determine the required power input and apply the right size motor needed for optimum efficiency. Familiarity with a wide range of cement and processing operations helps us apply the "work index" method to your equipment applications correctly.

Get all the facts. See your Allis-Chalmers representative or write Allis-Chalmers, Industrial Equipment Division. Milwaukee 1, Wisconsin.

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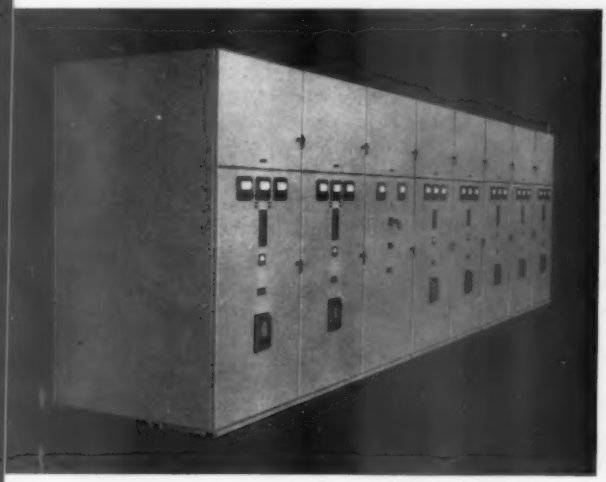
WAY of Getting Equipment

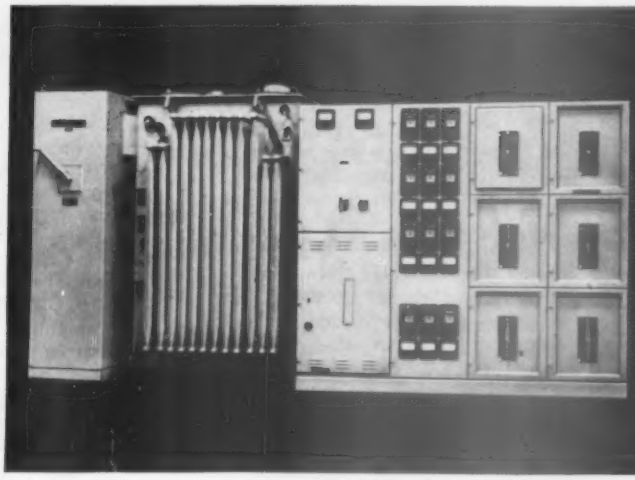
Correctly Applied

Specify Allis-Chalmers Processing Machinery *And* Electrical Equipment for the Cement Industry

Allis-Chalmers has long been recognized as a leading supplier of processing machinery for the cement industry. In fact more than 50% of the nation's cement is produced with A-C crushers, mills, screens and kilns. Allis-Chalmers is also one of the largest manufacturers of power equipment. *No other company* makes both the mechanical and electrical machinery for the cement industry. As a result, no other manufacturer has comparable facilities and experience necessary to apply and coordinate all equipment for a complete cement plant.

Industry's Top Technical Team at Your Service — Before a recommendation is made, requirements and variables are given a careful going-over by an Allis-Chalmers team comprised of research, design, manufacturing and application specialists from the electrical equipment and processing machinery departments. Characteristics of material, capacity, feed, preparation, balance of gradation, torque characteristics, system power factor needs are some of the many factors evaluated. Ideas and technical information evolving from this "meeting of minds" are then correlated in *one* department specializing in cement industry application. Components are matched to meet the requirements of your job. Responsibility for complete plant efficiency rests with one company.





Control — "Inching" a grinding mill is a push-button operation with synchronous motor control. Holding down the "inch" button rotates mill. The costly, time-consuming inconvenience of transferring from operating bus to inching bus is eliminated by using an automatic throw-over arrangement utilizing two high voltage air contactors.

Completely automatic and packaged pyro-processing control, with speed of feeder and kiln synchronized, is another recent Allis-Chalmers development.

Unit Substations — Allis-Chalmers LCS unit substations pay off in flexibility, ease of installation, maintenance, safety. Completely factory engineered incoming line units, transformer and low voltage switchgear combinations are coordinated and applied specifically for your distribution system. You get features such as breaker storage in the disconnected position in the unit, independent long time and instant trip elements on the breaker, dead-front circuit breaker construction.

CHALMERS A-C ALLIS-CHALMERS

A-5384

Photos will show Mech-Elec and other diesel power units at work. Paul Schnetzky in charge.

National Conveyor & Supply Co.—Booth 19.

Noble Co.—Booth 31. Stationary, semi-portable, and mobile cement and aggregate batching plants. Features use of NOBLE-MOBILE portable batching plant as a premix plant. Will show use of supplemental cement and aggregate storage. Robert C. Clark in charge.

Oshkosh Motor Truck, Inc.—Booth 1. Booth backdrop will carry several translytes showing complete line of ready mix carriers in operation. Model 18-34 will be on display. Alan M. Marker in charge.

The Owen Bucket Co.—Booth 61. Two models of material handling clamshell buckets will be on display; SCL, wide or barge type; KCL, regular material handling model. The barge type will show the centerline reeving principle, developed by the company. Wm. F. Marsteller, Jr. in charge.

Plant City Welding & Tank Co.—

Reo Motors, Inc.—Booth 4. New 1958 Reo 6-wheel model, specifically designed for ready-mixed concrete industry. Many changes in appearance are incorporated, and an entirely new type of suspension is featured. J. E. Tooker in charge.

Rockwell Spring & Axle Co.—Booth 69.

Servicised Products Corp.—Booth 56. Display of concrete specialty materials. Harry W. Johnson in charge.

Sika Chemical Corp.—Booth 62. Feature Plastiment Retarding Densifier, Sikacrete Accelerating Densifier, Rugasol for exposed concrete aggregate, and Igas joint sealer. Photos and technical data will feature concrete uniformity for all temperatures and job conditions. Dr. E. Schmid in charge.

Solvay Process Div., Allied Chemical & Dye Corp.—Booth 54. Solvay Calcium Chloride will be featured in exhibit. R. Lovatt in charge.

Syntron Company—Booth 7. Built-up display of working models of vibratory feeders, grizzly bar screens, screens, conveyors and spiral elevators. These arranged in closed circuit system. Also, bin vibrators, test sieve shakers and power conversion units will be displayed.

The T. L. Smith Co.—Booths 51-52-68. Smith front power take-off truck mixer and Smith Turbine Type mixer, a new development. The latter highlights speed in operation in mixing high-strength concrete. R. R. Bains in charge.

Tractomotive Corp.—Booth 49. Two front-end wheel loader models: 2-cu. yd. TL-20D TRACTOLOADER, and 1⅛-cu. yd. TL-12 TRACTOLOADER. Both are four-wheel drive machines. J. T. Skinner in charge.

The Travel Batcher Co.—Booth 34.

Western Machinery Co.—Booth 45. Full operating size (5 x 16-ft.) WEMCO-Remer Jig, which removes lightweight particles and segregates fine and coarse specification aggregate. WEMCO sand preparation machine; full-scale 36-in. spiral with flared tank. Heavy media separation in the WEMCO mobil-mill will be demonstrated in a short multi-section movie. Wm. F. Haddon in charge.

Westinghouse Transit Mixer Div., LeTourneau-Westinghouse Co.—Booth 10. On display, a 7-cu. yd. mixer mounted on FWD truck. Mixer to be equipped with new truck engine drive, recently announced. C. I. Gohmer in charge.

The White Motor Co.—Booth 32. Plan to show a White Model 9064, a tandem axle unit with a front-mounted power take-off to operate the T. L. Smith 6 cu. yd. mixer body. H. R. Stickel in charge.

Whiteman Manufacturing Co.—Booth 12. On exhibit, Model M-70 mixer mounted on a Mack truck, with entirely new type of engine take-off drive. First time exhibited. Also on display, new type of Power Buggy, which will be a walking type of unit as compared with riding type company has manufactured for 10 years. George A. Teasdale in charge.

Gar Wood Industries, Inc.—Booth 6. Model 75B ¾-cu. yd. excavator; heavy-duty Gar Wood dump body and hoist. Excavator features independent swing, hoist and travel as standard equipment. R. W. Zahniser in charge.

Worthington Corp.—Booth 35. On display, aggregate recovery unit, two new 1958 truck mixer models, electric water cut-off for truck mixers and cutaway transmissions. E. F. Kelly in charge.

CONRAD HILTON

American Manganese Steel Div., American Brake Shoe Co.—Booth 17. Featured are AMSCO pumps plus auxiliary pumping assemblies, nozzles, elbows, nipples and valves; six-blade rotary cutter head; and AMSCO MF semiautomatic welding machine with samples of various types of electrodes. Nelson M. McGuire, Dexter G. Sherwood and Walter Gray in charge.

American Steel & Wire Co., U. S. Steel Corp.—Booth 37.

Autolene Lubricants Co.—Booth 71.

Baldwin-Lima-Hamilton Corp.—Booth 41. Modern prefab display with colored transparencies showing equipment applied to sand and gravel industries. Includes photos of new LIMA Austin-Western 736-C portable crushing plant equipped with Allis-Chalmers Hydrocone crusher. Stan Kreher in charge.

Bucyrus-Erie Co.—Booth 74. Model 150-B 6-cu. yd. shovel on exhibit. R. C. Adams in charge.

Burkhart Engineering Associates, Inc.—Booth 5. Consolidated Duo Boiler, completely set up for use in a ready-mix operation, will be on display. Also, for first time, company will show combination gas-oil burner that is capable of burning oil, LP gas, manufactured gas, mixed gas or natural gas. This is a forced draft burner. Lee Polisner in charge.

C & W Sales Co., Inc.—Booth 54.

Calcium Chloride Institute—Booth 4. Technical assistance and pertinent literature for visitors will be available. Automatic dispenser for calcium chloride will be demonstrated. W. F. Reynolds in charge.

Chicago Fly Ash Co.—Booth 45. Exhibit will feature the use of fly ash in concrete. In addition to colorful exhibit, personnel on hand will provide engineering in-

(Continued on page 116)

Lifting heavy beams for steel-skeletoned skyscrapers, over the heads of pedestrian and vehicular traffic, calls for careful loading — with safe slings, stout wire rope and a crane that's securely guyed with steel cables. Structural steelworkers practice safety because they know that...

life depends on it

Today, taller buildings, bigger bridges, deeper oil wells, greater construction projects require stronger, safer wire rope. And equipment operators know that when you buy "bargain" rope you're heading for headaches, trouble and expense. So don't bargain with safety. Buy wire rope on the basis of *quality*. Buy Wickwire Rope.

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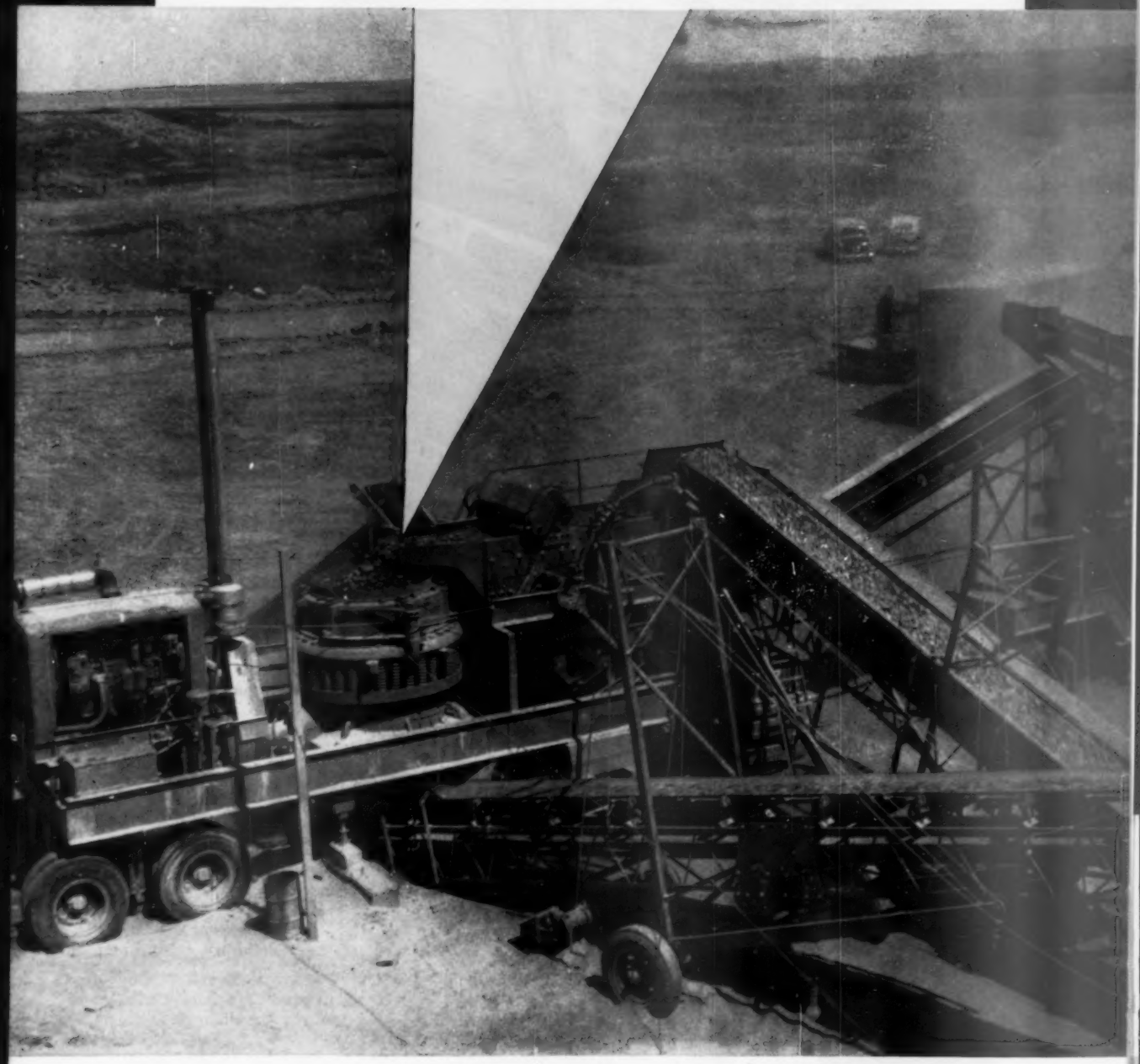
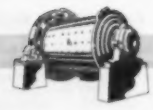
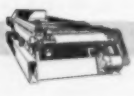


SYMONS PRIMARY GYRATORY CRUSHERS



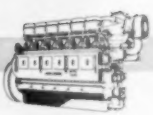
NORDBERG GRINDING MILLS

SYMONS VIBRATING GRIZZLIES



SYMONS VIBRATING SCREENS

NORDBERG KILNS DRYERS, COOLERS



NORDBERG ENGINES

...a Profit-Making Combination for the BIG JOBS ahead

When you combine the proven ability of Symons Cone Crushers to produce big capacity of accurately sized product, together with the complete mobility of a portable plant, you gain many of the advantages of stationary plant operation that you can take right to the job. That's the combination that helps you beat competition and make more money on the big jobs ahead.

Here's where portability pays off—With the plant working close to a big dam project, concrete construction job or airport project, you cut hauling costs and save time. On roadbuilding contracts, the portable-mounted Symons Cone Crusher often can move to the job site, or move from pit to pit to take advantage of better material or more favorable crushing percentages. On bituminous concrete jobs, you can supply specification material to asphalt plants from convenient, near-by locations.

Symons Cone Crushers are known throughout the world for efficient, low-cost performance and high capacities of uniform fine-crushed products . . . and now you can have those profit-boosting advantages on a 100% portable plant. Before you submit your next bid, get full information about Symons Cone Crushers for portable plant service.

(Left): Increasing numbers of portable plant operators are now using Symons Cone Crushers for big capacity of fine product . . . such as this efficient Cedarapids Model 4-ICS portable intermediate crushing plant utilizing a 4′ Symons Cone Crusher.

— AND FOR STATIONARY PLANTS

Symons Cone Crushers are the choice of leading producers throughout the world for secondary and finer reductions in all types of ore and mineral processing operations. Available in both Standard and Short Head types, Symons Cones are built in sizes from 22″ to 7′ in diameter, for capacities of from 6 to 900 or more tons per hour. *Write for literature.*

C357

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SYMONS CRUSHERS SCREENS NORDBERG

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NORDBERG MFG., CO.
Milwaukee, Wisconsin

formation. Hand-out folder available; will feature mix design tables for concrete containing fly ash. C. E. Lovewell in charge.

Cleaver-Brooks Co.—Booth 76. Featured will be CB boiler exclusives, including four-pass forced-draft design, fuel flexibility, hinged doors and starting service. For all concrete industry applications. W. Schumann in charge.

Concrete Construction Magazine—Booth 31.

Concrete Controls Corp.—Booth 19.

Concrete Products—Booth 51.

Concrete Publishing Corp. — Booth 69.

Contractors and Engineers—Booth 63.

Cross Engineering Co. — Booth 15. Booth will show CROSS perforated steel segments, sections and decks for vibrators, shakers, revolvers and other types of new equipment. New line to be exhibited will be turned integral edge preparations. G. H. Day in charge.

Frank D. Davis Co.—Booth 20. On display, colored murals to show application of colored oxides to cement. Frank Davis in charge.

Deister Machine Co.—Booth 48. Operating double-deck 5x10-ft. vibrating screen, incorporating latest improvements. Irwin F. Deister in charge.

Dewey & Almy Chemical Co.—Booth 64. Booth will feature new water reducing agent for concrete, WRDA, and will show steps WRDA passes through from manufacture to final use by ready-mix operator. Also to be displayed: Darex AEA, firm's air-entraining agent for concrete. William M. Rand, Jr. in charge.

Dodge Manufacturing Co. — Booth 61. Demonstration of Para-flex, new type of shaft coupling that handles any kind of misalignment, will be featured. Also demonstrated will be Micro-Mount method of mounting pillow block bearings on shafts. On display: Torque-Arm speed reducer, new developments in Flexidyne dry fluid drives and couplings, and assembly of a drive showing Taper-Lock steel conveyor pulley, Dodge-Timken All-Steel pillow blocks, Torque-Arm speed reducer, Taper-Lock V-belt drive and Flexidyne. Ralph Hanes in charge.

Edick Laboratories, Inc.—Booth 59. New, automatically resetting, remotely controlled water-control meter. Dial calibration will be custom set to any range from 0-300 gal. Other items exhibited include E-dex, air-entraining agent; Dry-Film; ETCH, new masonry cleaner. John Hinkamp in charge.

Engineered Equipment, Inc. — Booth 47. L. E. Parker in charge.

Fairfield Engineering Co.—Booth 58. Complete new line of storage bins, including a circular storage bin to be shown for the first time. Also will show new Fairfield belt conveyor idlers. J. Halperin in charge.

Forrer's Div. of Spray-O-Bond Co.—Booth 70. Exhibit will show Ramsey moisture sand probe and water control system. Also, the following Forrer's admixtures will be displayed: Kleen-Mix, Form Oil, X1-100 Plasticizer, and Accelerator. E. Netzband in charge.

Food Machinery & Chemical Corp.—Booth 9. Form-Crete all-steel casting forms for prestressed concrete, including new turned-up edge Double-T forms and the PCI-AASHO approved bridge beam forms. E. L. Cole in charge.

Gatke Corporation—Booth 21.

General Electric Co.—Booth 57. Will feature new "100-line" of motor starters, new line of gear motors and transmission components, and most up-to-date Tri-Clad 55 induction motors. Overall display will feature suitability of above products to unusual operating conditions of aggregate plants. R. D. Ketner in charge.

Gilson Screen Co.—Booth 7. Company will display the Gilson Testing Screen with four new optional accessory items. These include Hydraulic Clamping accessory, Door Enclosure accessory, Sample Splitter and Tray Racks for storage of screen trays. R. Heath Smith in charge.

Gruendler Crusher & Pulverizer Co.—Booth 35.

George Haiss Manufacturing Co., Inc., Div. of Pettibone-Mulliken Corp.—Booth 73.

Hardy Scales Co.—Booth 72. New ROBAC (remote operation by automatic control) and new Hardy Batch Control Printers will be shown. ROBAC permits selective automation from a centrally located point. Control printers are data recording devices, designed to add advantages of permanent records to automatic batch weighing systems. O. A. Robin in charge.

Harnischfeger Corp.—Booth 27. Booth background will feature P & H equipment for sand and gravel industry. Other exhibits will include: cutaway sections of equipment, new DC welders and electrodes, Zip-Lift hoist and five movies on sand and gravel and quarry operations showing P&H machines on the job. B. W. Thorpe in charge.

HarriSteel Products Co.—Booth 13.

Hendrick Manufacturing Co.—Booth 38. Standard exhibit will show various types of perforated metals used in the sand and gravel industry. John J. Risko in charge.

Hewitt-Robins Inc.—Booth 36. Booth will include several items of materials handling and other types of equipment: 4 x 8-ft. vibrating feeder, 25 ft. length of 24-in. sectional conveyor, 4 x 12-ft. Vibrex screen, RoBINtronic Level Indicator, idlers and conveyor belting. W. B. Hicks in charge.

Howe Scale Co.—Booth 52.

Iowa Manufacturing Co.—Booth 75. Exhibit features individual units of company's crushing line: CEDARAPIDS Twin jaw crusher and CEDARAPIDS Double Impeller impact breaker. New items will be covered by photos and information bulletins: Twin Shaft Stabilized Base Pugmill, Portable Secondary Crushing Plant and new portable Pitmaster tandem crushing plant. A. C. Gossard in charge.

Kensington Steel Co.—Booth 28. Manganese steel castings as repairs for shovels and crushers. Also on exhibit will be replacement parts for tractors, including renewable sprocket rims. Earl Lerner in charge.

Ludlow-Saylor Wire Cloth Co.—Booth 62. Samples of square-opening and long-opening woven-wire ag-

gregates screens to be featured. Of special interest: a model vibrating screen section showing a fine-mesh sizing screen supported by a coarse-mesh backing screen. John F. Steffens in charge.

McLanahan & Stone Corp. — Booth 50. On exhibit: scale models, full-size components and a general display background covering crushers, washers, feeders and allied equipment. M. Craig McLanahan in charge.

Manganese Steel Forge Co. — Booth 49. On display, ROL-MAN woven screens and perforated plate, pins and bushings, skirt boards for screens and other wear plates, weldments for many applications in the aggregates field. Two new catalogues available at booth: one for ROL-MAN screens, the other for fabricated items. H. C. Doepken in charge.

E. F. Marsh Engineering Co.—Booth 8. Company will introduce a new portable conveyor at the Show. Further information not available at press time.

The Master Builders Co.—Booth 25. On exhibit: a photographic presentation of outstanding construction jobs throughout the world completed since 1955 in which Pozzolith was used. Unusual presentation of architectural and engineering beauty in field of modern concrete construction. V. S. Andrews in charge.

W. R. Meadows, Inc.—Booth 66.

Motorola Communications & Electronics Inc.—Booth 43. New line of "T-Power" mobile two-way radio units, featuring transistorized power supplies for both receiver and transmitter. Black finned radiators—"heat sinks"—take heat away from germanium power transistors, permitting them to operate at high ambient temperature. Units said to be most important advance in power-supply design in 15 years. Gene Bird in charge.

Nagle Pumps, Inc.—Booth 11. Equipment to be shown includes 1½-in. Type HR Frame 71G material-handling pump, 1-in. Type HA Frame 57E self-priming pump with open impeller for handling comparatively clean liquids, and 1-in. Type HA Frame 57E self-priming pump with closed impeller for handling more abrasive mixtures. Perry Nagle in charge.

Nordberg Manufacturing Co.—Booth 18. Exhibit will feature ¼-scale operating models of Symons cone crusher, rod deck screen, rod grizzly, bar grizzly, V-Screen and Type F horizontal vibrating screen. Also, motion picture on operation and application of Symons cone crusher will be shown continuously; film will include recent applications of the Gyradisc crusher. L. F. Thompson and R. E. Schulz in charge.

Northwest Engineering Co. — Booth 16. Unusual color transparencies of company's shovels, draglines and clamshells on exhibit. No equipment. George Williams in charge.

Pettibone-Mulliken Corp.—Booth 73.

Pick Manufacturing Co.—Booth 68.

Pioneer Engineering Works, Inc. — Booth 30. On display, a ¼-scale operating model of a complete crushing, screening and sizing plant for sand and gravel producers. Model is authentic in every respect. Consists of a heavy-duty feeder, jaw crusher, two-deck scalping and sizing screen, triple roll crusher and a three-deck sizing screen together with conveyors, blending chutes and storage bins. Also shown will be company's line of aggregates washing plants and line of portable duplex crushing and screening plants. W. A. Rundquist in charge.

Pit & Quarry Publications—Booth 56.

Productive Equipment Corp. — Booth 14. Will show a 4 x 12-ft. two-deck base-mounted GYROSET screen with deep side sheets. Units on display will go directly to producer after the Show. L. H. Lehman in charge.

Radio Corporation of America—Booth 6. Exhibit will feature company's line of Carfone two-way radio equipment. New products that may be shown include: Minitrol—a combination microphone-control-speaker; Quiet Channel—a selective device that eliminates co-channel interference; Personalfone—a new pocket size radio receiver. R. C. Dubois in charge.

Richmond Screw Anchor Co., Inc.—Booth 67.

Riverside Manufacturing Co.—Booth 44.

Rock Products—Booth 51.

Sarasota Engineering Co., Inc.—Booth 3. On exhibit, two new items: Mark X H_2O Meter and Hydrobot. Mark X meter uses alternating current bridge in its measuring circuit to accurately determine sand moisture. Hydrobot, for block manufacture, is result of advance engineering applied to automatic mix water control. R. W. Wilcox in charge.

Sauerman Bros., Inc. — Booth 23. Booth will contain a 3-cu. yd. DragScraper, a Slackline Cableway hoist model, Durolite wire rope blocks, and color photos of several sand and gravel installations. Melvin Martin in charge.

Screen Equipment Co., Inc.—Booth 1. Booth will contain two vibrating screens. One, to be announced at the Show, is a two-bearing patented screen that features easy removal of complete shaft assembly. It is a self-balancing unit with a free-floating shaft. Also on exhibit, a 3 x 10-ft. triple-deck screen and a standard four-bearing SECO. N. J. Gleiser and C. S. Fielding in charge.

Simplicity Engineering Co.—Booth 42. Will show a vibrating feeder grizzly and a two-deck vibrating screen. Grizzly feeder combines scalping and feeding in one operation, providing a smooth, controlled rate of feed. Ralph C. Johnson in charge.

SKF Industries, Inc.—Booth 40.

A. O. Smith Corp., Permaglas Div.—Booth 2. Coil-type water heaters will be on display, including Model 718 that delivers 405 gal. per hr. at 100 deg. rise. Operated on all gases. Application in ready-mix concrete operations and can be used for radiant grids in heating aggregate bins. D. V. Coon in charge.

Smith Engineering Works—Booth 26. Working models of various items of company's equipment. H. H. Schaper in charge.

Soiltest, Inc.—Booth 55. The big item on display will be a model CT-11 portable concrete tester, which will be set up and demonstrating the compression testing of 6 x 12-in. concrete cylinders. A concrete briquette tester, model CT-700, another new item, will be exhibited here for the first time. It tests the tensile strength of concrete mortars. Also exhibited will be a new Model CL-392 Dynamic Sieve Shaker, with 8-in. and 12-in. capacities. Edward E. Brush in charge.

(Continued on page 172)

National Crushed Stone Association program

41st Annual Convention
Conrad Hilton—Chicago, Illinois
February 17, 18, 19, 1958

Monday, February 17

Morning Session

N. E. Kelb, President, National Crushed Stone Association, President, Cumberland Quarries, Inc., Indianapolis, Ind.
Presiding

9:30—"We'll Take the High Road" —Sound color moving picture through courtesy of the American Road Builders Association, Washington, D.C.
10:00—Greetings from the President —N. E. Kelb
10:15—Report of Elections by Board of Directors
10:30—Report of Executive Director —J. R. Boyd
11:00—"Threatened Road Blocks in the Highway Program"—Pyke Johnson, Past President, Automotive Safety Foundation, Washington, D.C.
11:30—"The Price of the Best is Always All the Rest"—Frank Lovejoy, former marketing and sales executive, Socony Mobile Oil Company, Inc., New York, N.Y.
12:00—Adjournment

12:30—Greeting luncheon

Presentation of NCSA Safety Contest Awards—H. H. Kirwin, Chairman NCSA Accident Prevention Committee; Treasurer, Eastern Rock Products, Inc., Utica, N.Y.
"Laughter vs. Slaughter"—Louie E. Throgmorton, Vice President and Director of Public Relations, Republic National Life Insurance Company, Dallas, Texas

Afternoon

2:30-5:00—Inspection of manufacturers division exposition

6:30-11:00—NCSA FROLIC

Dinner—Entertainment—Dancing

Tuesday, February 18

Concurrent Morning Sessions

Operating men, equipment manufacturers
Montagu Hankin, Jr., Executive Vice President
Houdaille Construction Materials, Inc.
Division of Houdaille Industries, Inc.
Morristown, N.J.
Presiding

9:00—"Quarry Efficiency Standard Record Keeping" — T. C. Cooke, Lynn Sand & Stone Co., Swampscott, Mass.
9:15—"Studies on the Efficiency of Quarry Operations"—M. J. Kilpatrick, Engineer, U. S. Bureau of Public Roads, Washington, D.C.
9:45—"Knowing's Not Enough" — Sound color moving picture through the courtesy of United States Steel Corporation, Pittsburgh, Pa.
10:00-12:00—Company policy makers round table
John F. Lane, Gall, Lane and Howe, Washington, D.C.
General Counsel, National Crushed Stone Association
Discussion Leader

This Round Table will be a give and take session for company policy makers and advisors concerned with federal regulations affecting the crushed stone industry

10:15—Coffee break
10:30—"Recent Trends in Plant Design"—R. T. Lassiter, New York District Manager, Western Knapp Engineering Company, New York, N.Y.
11:15—"Timely Tips on Operating Problems"
12:00—Adjournment
12:30—Manufacturers division luncheon (For Members of the Manufacturers Division Only)

Manufacturers division annual business meeting

Afternoon Session

2:30—Committee Reports
3:00—"This Problem of Skid Resistance"—A. T. Goldbeck, Engineering Consultant, National Crushed Stone Association, Washington, D.C.
3:30—"Telephone Techniques" Clinic—Charles Bury, Communication Consultant, Dallas, Texas
4:30—Adjournment

Wednesday, February 19

Morning

9:00-12:00—Inspection of manufacturers division exposition
12:30—General luncheon
"Soviet Union and Eastern Europe"—Jack Raymond, New York Times Correspondent, Washington, D.C.

Afternoon Session

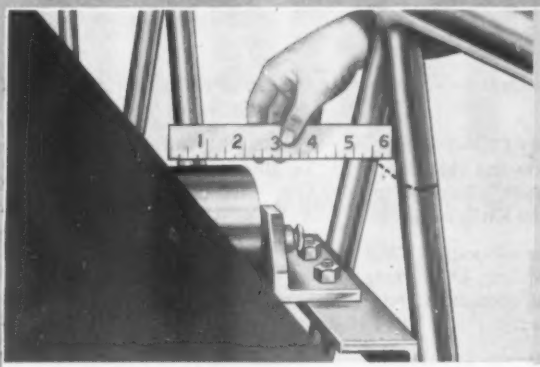
2:30—Report of Engineering Director—J. E. Gray
3:00—"Aggregates for Federal-Aid Roads"—Harold Allen, Chief of the Division of Tests, U. S. Bureau of Public Roads, Washington, D.C.
3:30—"Blasting Vibrations — Cause and Effect"—Sound color moving picture through courtesy of Hercules Powder Company, Wilmington, Del.
4:00—"An Effective Public Relations Program for an Aggregate Producer"—Earl P. Holwadel, Sales Manager, Ohio Gravel Co., Cincinnati, Ohio
4:30—"Legislative Outlook" — John F. Lane, Gall, Lane and Howe, Washington, D.C.; General Counsel, National Crushed Stone Association
5:00—Adjournment
6:00—Cocktails
7:00—Dinner dance—entertainment

END

(Preview continued on page 120)

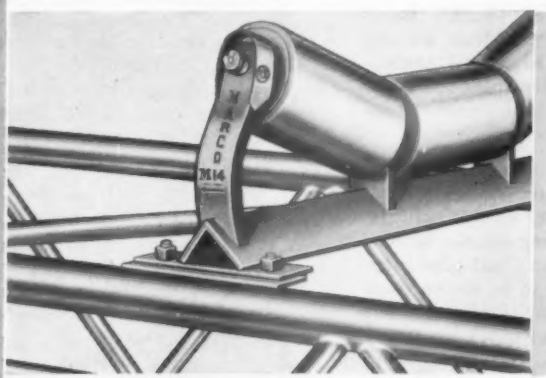
REDUCE BELT COSTS WITH MARCO TUBULAR FRAME CONVEYORS

Exclusive conveyor features increase belt life by offering maximum protection against edge damage

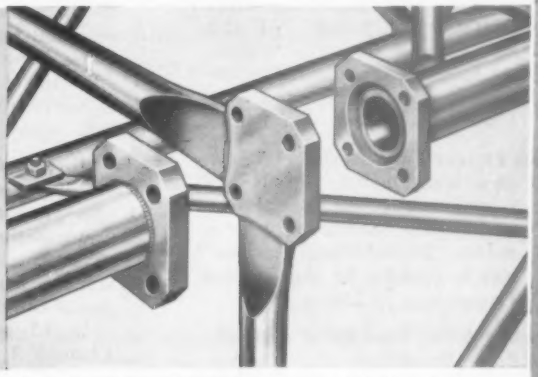


WIDER FRAME—MARCO Tubular Frames are widest in the industry. They provide 100% more space (5½") in the critical area—between belt edge and nearest frame member. Pedestal type return idler brackets are used, instead of hanger brackets that confine and damage belt.

WIDER FACE PULLEYS—MARCO is first with modern pulley specifications. 2" between belt and pulley edge—provides 100% greater protection than outmoded standards. Reduces possibility of belt destruction caused by "belt wandering" in high tension areas.



ALL TUBULAR MEMBERS—MARCO Tubular Frames are more rigid. Constructed of the strongest known structural member, these frames are modern—and resist material and water build-up. Sharp "belt cutting" edges are eliminated with this exclusive construction.



RIGID JOINT CONSTRUCTION—Another MARCO exclusive—4 bolts in each connection—16 in each joint. Not the usual 1 or 2 per connection. Joints are more rigid. Resists frame misalignment, simplifying belt training and increasing belt life.

Now, more than ever, conveyor belt represents the largest major repair or replacement expense in a conveyor installation. Realizing the extreme importance of this fact, MARCO has designed every conceivable belt saving idea into its Tubular Frame Conveyors.

MARCO is first to have all 4 of these proven belt protection features: a wider frame, wider face pulleys, all tubular members and the most rigid joint construction.

If wind, uneven loading, or factors beyond control should cause "belt-wandering", this exclusive conveyor design offers the operator the finest, most complete protection against belt "edge damage".

Increasing belt life by reducing belt "edge damage" is only one of the cost saving advantages in MARCO Tubular Frame Conveyors. Remember, your conveyors are not mere plant accessories—they deserve the attention of a specialized manufacturer offering modern specifications, carefully and properly designed to meet your most exacting requirements. For more information consult your MARCO Distributor or contact E. F. Marsh Engineering Co., St. Louis 10, Missouri.

MARCO*

engineered MARCO products:

Tubular Frame Belt Conveyors • Conveyor Idlers • Solid and Self Cleaning Steel Pulleys • Bucket Elevators • Control Gates • Feeders • Bins

*Trademark Reg.

Enter 1431 on Reader Card

Booth by booth . . .

at the Crushed Stone show

Editors' Note: Information contained in these listings is that received from manufacturers who are exhibiting at the February Shows, and that received up to the last minute before publication deadline. Late changes in exhibits, and other factors, may cause unavoidable discrepancies in information presented.

Conrad Hilton North Hall & Lobby

American Cyanamid Co.—Booth 3.

Aquadyne Corp.—Booth 16. Will display the Aquadyne wetting agent capsule—heart of the Aquadyne Dust Control System. Will also have photos of spray nozzles, solenoid valves, automatic switching and related accessories. J. H. Harger in charge.

Atlas Powder Co.—Booth 1. Will display latest blasting agents and explosives and have a visual demonstration on detonating devices. A film, "We're blasting near you" will be available for showing. Joe Dannenberg in charge.

Brunner & Lay Rock Bit of Asheville, Inc.—Booth 7.

Cape Ann Anchor & Forge Co. — Booth 28. Will show two "Cape Ann" forged steel drop balls. One of regular design; the other is new, hand-forged from abrasion resisting chromium, molybdenum alloy steel, especially heat treated to withstand shock and wear. Andrew H. Nutton in charge.

Chain Belt Co.—Booth 23.

Contractors & Engineers—Booth 6.

Diamond Iron Works, Div. of Goodman Mfg. Co.—Booth 11. Comfortable booth with backboard and display of current literature covering products manufactured. Carl E. Hanson in charge.

Du Pont, E. I., de Nemours & Co.—Booth 12. Will feature line of blasting agents.

Easton Car & Construction Co.—Booth 19.

Electric Steel Foundry Co.—Booth 13. Will show bucket and shovel dipper teeth, adapters, cutting edges and end bits. Tom Kirby in charge.

Hercules Powder Co.—Booth 22. Will feature a new line of blasting agents in metal containers and a new type primer.

Howe Scale Co.—Booth 29. On display, Batchmaster Control, a device to automatically proportion materials being weighed. Also will show Mechanoprint, an automatic recorder to print the weight of materials or vehicles being weighed. You also can see the Howe Tape Drive Dial Mechanism and a new plug-board attachment for batchmaster control.

Hoyt Wire Cloth Co.—Booth 17a. Samples of entire range of heavy aggregate wire screens will be shown, including samples of construction features and edge preparations. Also to be shown, samples of company's companion line —Hoyt Better Rubber Bucker-up Channel. R. K. Warner in charge.

Johnson-March Corp.—Booth 4.

Kennedy-Van Saun Mfg. & Engineering Corp.—Booth 27.

Marion Power Shovel Co., Div. of Universal Marion Corp.—Booth 8. Featured in booth will be a selection of colored photos showing various models of machines working in quarries throughout the world. Dudley B. Reed, Jr. in charge.

Marsh, E. F., Engineering Co.—Booth 15. Company will introduce a new portable conveyor at the show. Further information not available at press time.

Mayhew Supply Co.—Booth 17b.

Northern Blower Co.—Booth 20. Will feature literature on dust arresters, hydraulic washers and NOR-BLO H.S. and L.S. fans. L. A. Eiben in charge.

Olin Mathieson Chemical Corp.—Booth 5.

Pit & Quarry Publications—Booth 2.

Quaker Rubber, Div. of H. K. Porter Co.—Booth 30.

Rock Products—Booth 21.

Soiltest, Inc.—Booth 18. The big item on display will be a model CT-11 portable concrete tester, which will be set up and demonstrating the compression testing of 6 x 12-in. concrete cylinders. A concrete briquette tester, model CT-700, another new item, will be exhibited here for the first time. It tests the tensile strength of concrete mortars. Also exhibited will be a new model CL-392 Dynamic Sieve Shaker, with 8 in. and 12-in. capacities. Edward E. Brush is in charge.

Traylor Engineering & Mfg. Co.—Booth 10. Booth will include photos of jaw and gyratory crushers, kilns, feeders, etc. These will be transparencies. C. Hayward Roberts in charge.

Williams Patent Crusher & Pulverizer Co.—Booth 14. Will show No. 220 Slugger Hammer Mill, with plastic working model of Mechanical Air Separator. Also, cutaway view of running Williams Impactor. Ray F. Schneider and Edgar M. Carson in charge.

Conrad Hilton South Hall

Allis-Chalmers Manufacturing Co.—Booth 75. Models of latest types of crushing and screening equipment. R. N. Brown in charge.

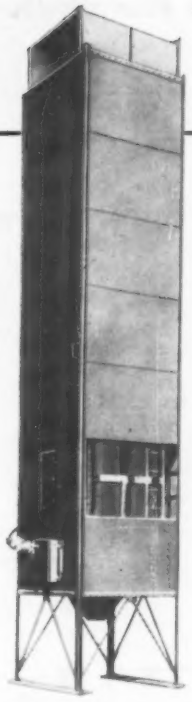
American Manganese Steel Div., American Brake Shoe Co.—Booth 38. On display, 2½-cu. yd. dipper, shovel shoe for crawler excavator, tractor shoe, jaw plate for crusher, Hammer Mill

(Continued on page 122)

The latest advancement in dust recovery

Dualaire*

JET-CLEANED DUST COLLECTORS



- *Cleans without jarring or rapping!*
- *Maintains uniformly low pressure drop!*
- *Field-proven efficiency as high as 99.99%!*

Backed by the same organization that pioneered commercial application of COTTRELL Precipitators and MULTICLONE Collectors, the DUALAIRE Jet-Cleaned Dust Collector is revolutionizing filter-type recovery systems. The DUALAIRE gives you vital advantages like these...

JET-CLEANING ACTION clears the filter tube continuously in small increments—not with sudden surges as in rapping or jarring.

CLEANING ACTION starts automatically and stops automatically to keep pressure differential within low pre-set range.

FILTER EFFICIENCIES under actual field operations, run as high as 99.99%. And filter capacity remains uniformly high at all times because no thick filter cake ever forms to reduce effectiveness!

NO STANDBY UNITS, with their complicated switching devices, are needed. The DUALAIRE is cleaned as it filters — without interruptions or shut down periods for cleaning. The operation is continuous!

FILTER UNITS LAST LONGER because they are not subjected to intermittent jarring, rapping or vibration—all destructive to filter fabrics.

The above are only a few of the many important advantages you get in DUALAIRE Dust Collectors. This 8 page booklet gives the full story... explains how the jet-cleaning action works — shows how the basic DUALAIRE unit is adaptable to a wide range of operating requirements — provides facts, figures and illustrations that will change your thinking on filter-type recovery systems. Send for your free copy of this descriptive booklet — or see your nearest Western Precipitation representative.

COTTRELL Electrical Precipitators
MULTICLONE Mechanical Collectors
CMP Combination Units
DUALAIRE Jet-Cleaned Filters
HOLO-FLITE Processors
HI-TURBIANT Heaters

WESTERN
PRECIPITATION
CORPORATION

Engineers and Constructors of Equipment for Collection of Suspended Material from Gases . . . and Equipment for the Process Industries

LOS ANGELES 54 • NEW YORK 17 • CHICAGO 2 • PITTSBURGH 22 • ATLANTA 5 • SAN FRANCISCO 4

Representatives in all principal cities

Precipitation Company of Canada Ltd., Dominion Square Bldg., Montreal

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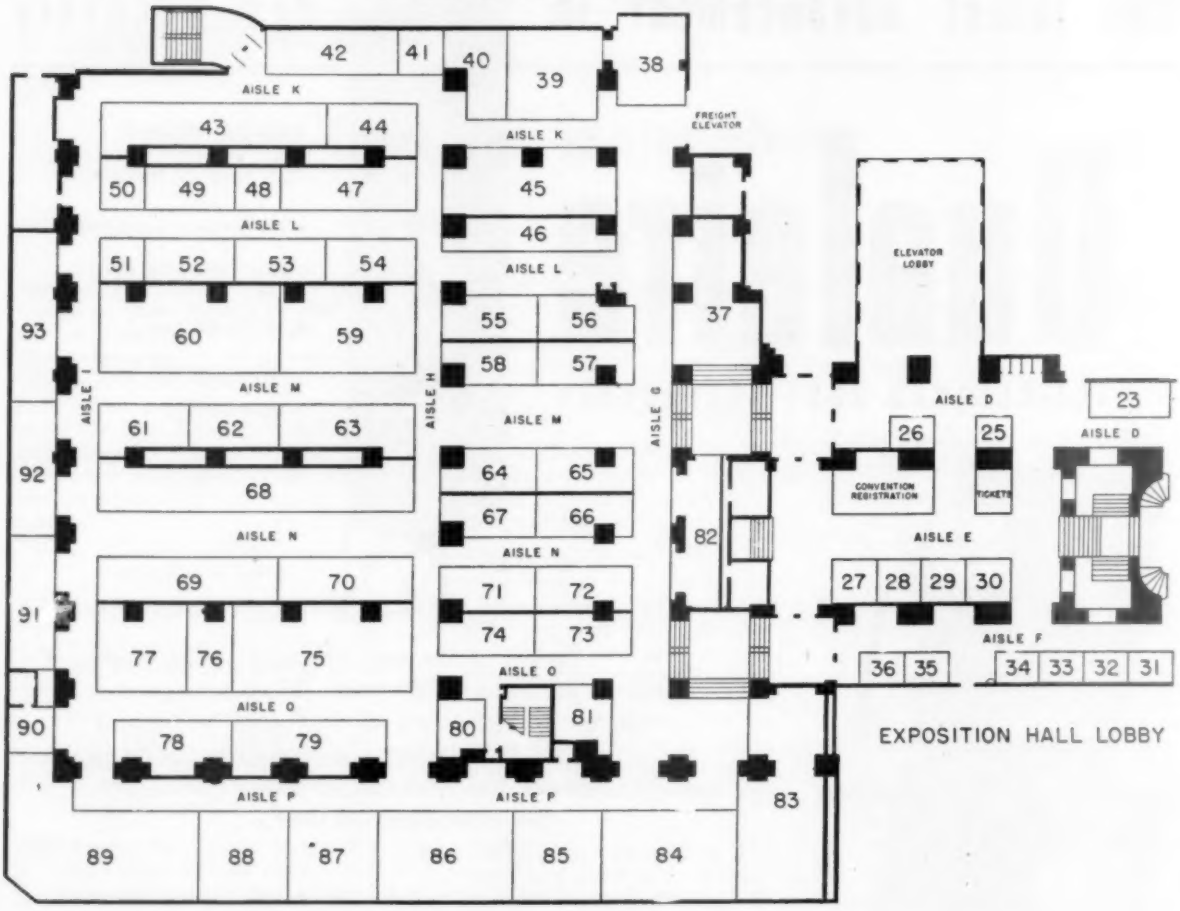
FLOOR PLAN OF BOOTHS AT CONRAD HILTON HOTEL

National Crushed Stone Association Show



hammer, impeller bar for impactor-type crusher, semi-automatic welding machine and various wear parts. Walter Gray in charge.

American Steel and Wire Div.—Booth 64.

Baldwin-Lima-Hamilton Corp.—Booth 82. Modern pre-fab display with lighted colored transparencies showing equipment applied to crushed stone industry. Includes photos of new LIMA Austin-Western 736-C portable crushing plant equipped with Allis-Chalmers Hydrocone crusher. Stan Kreher in charge.

Barber-Greene Co.—Booth 59. No actual equipment exhibited. Booth will illustrate by colored photomurals and color transparencies all company's products of interest to crushed stone—belt conveyors, car unloaders, feeders, hoppers, the Duo-Screen. H. W. Newton in charge.

Bucyrus-Erie Co.—Booth 85. An operating model of a 6-cu. yd. B-E 150-B shovel will be on display. In addition there will be photographs of their latest models—the 11B Transit Machine which is readily convertible from a 10-ton lifting crane to a dragline, clamshell, hoe or shovel and the 30-B a completely new crane-excavator in the 1 cu. yd. class.

Caterpillar Tractor Co.—Booth 60. Industrial power and materials handling equipment. New D337 (Series F) electrical and mechanical drive unit for crushers. Gives mechanical energy for crushers and electricity for flexible control

(Continued on page 124)

PETER KIEWIT SONS' CO. produces:

Aggregate and mineral filler for bituminous surface course

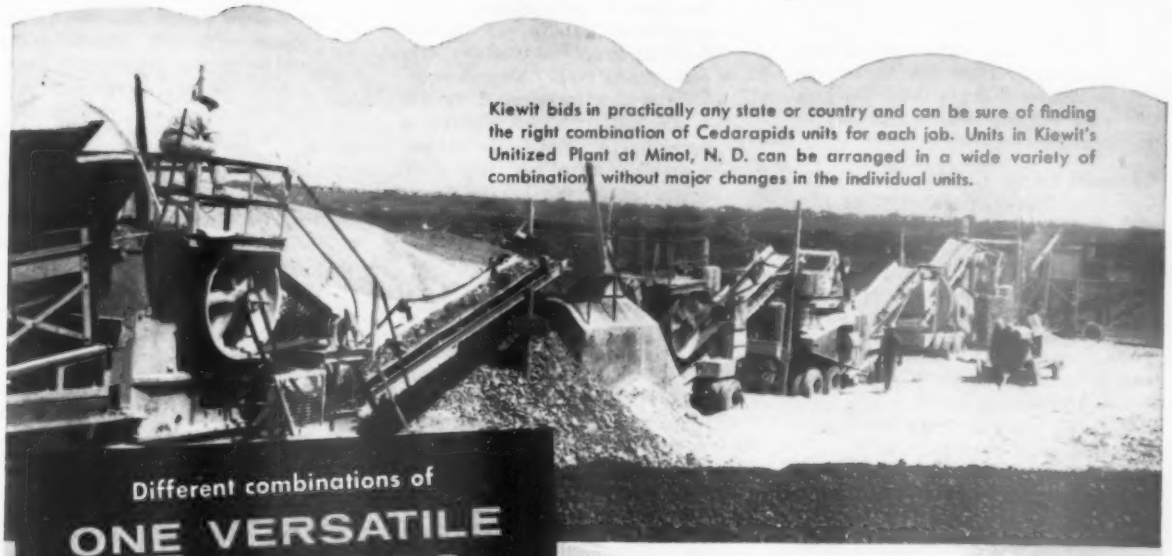
In one arrangement of Cedarapids Units, large size pit material is initially crushed by a 2540 Portable Primary Jaw Crusher and further reduced by an 1836 Primary Jaw. Material then goes through an Intermediate Roll Crusher Scalping Unit and finally a Roll Crusher Secondary Plant. With this efficient combination of Cedarapids units, Kiewit produces minus ⅜" fine aggregate containing rock dust mineral filler, and ¾" surface course aggregate.

Three sizes of aggregate for concrete and binder course

In a different combination of units, the same Cedarapids Unitized Plant produces 1½" concrete aggregate, ¾" concrete aggregate, 1" hot-mix binder course aggregate.

Washed aggregate

From stockpile and double log washer, a Cedarapids 24" x 50' Conveyor delivers aggregate to a Cedarapids 4' x 12' triple-deck Horizontal Vibrating Screen installed over the loading bin and equipped with spray bars for final washing.



Kiewit bids in practically any state or country and can be sure of finding the right combination of Cedarapids units for each job. Units in Kiewit's Unitized Plant at Minot, N. D. can be arranged in a wide variety of combinations without major changes in the individual units.

Different combinations of

ONE VERSATILE CEDARAPIDS UNITIZED PLANT

supply many sizes of concrete and hot-mix aggregates for Minot Air Force Base

The flexibility of this Cedarapids Unitized Plant, and the contractor's ingenuity in varying the unit combinations to meet specifications for both concrete and hot-mix aggregate, assure maximum efficiency at low production cost.

There's a combination of Cedarapids crushing, screening, scalping and washing units that will solve your problem by producing almost any quantity, any specification, and meet practically any production condition. And remember, 100% portability lets you take them where the best contracts are. Ask your Cedarapids distributor to explain Unitized operation and show you how you'll profit.

Cedarapids — Built by IOWA

IOWA MANUFACTURING COMPANY Cedar Rapids, Iowa, U. S. A.

Enter 1499 on Reader Card

of conveyors. No. 955 Traxcavator, equipped with side dump bucket. Translite exhibits of other equipment in action. Raymond F. Mueller in charge.

Clark Equipment Co.—Booth 89. Film called "Bonus Buckets," on application and use of tractor shovels. Two machines—1¼-cu. yd. "Michigan" Model 75A tractor shovel and 2-cu. yd. "Michigan" Model 125A tractor shovel. Joseph L. Dorfler in charge.

Cross Engineering Co.—Booth 48. Booth will show CROSS perforated steel segments, sections and decks for vibrators, shakers, revolvers, and other types of new equipment. New line to be exhibited will be turned integral edge preparations. G. H. Day in charge.

Cummins Engine Co., Inc.—Booth 83. Five diesel engines, of which two are new models, from 75 to 600 hp. New V-8 engine features higher horsepower with lighter weight, simple design and fuel economy. J. D. Gatten in charge.

Deister Machine Co.—Booth 72. Operating double-deck 5 x 10-ft. vibrating screen, incorporating latest improvements. Irwin F. Deister in charge.

Drill Carrier Corp.—Booth 88.

Eagle Iron Works—Booth 71. Booth backing will have projector showing slides of various Eagle installations at crushed stone plants. An Eagle breaker ball will be exhibited in the booth. Large blowups will show details of new Log Washer with improved drive, and new heavy-media separation plant. C. B. Laird in charge.

Euclid Div., General Motors Corp.—Booth 79. Booth exhibit only. Information on various items of equipment will be available. R. E. Keidel in charge.

Frog, Switch & Manufacturing Co.—Booth 41.

Gardner-Denver Co.—Booth 45. On display, Deluxe Air Trac, RP600 rotary portable compressor, Models S48 and S58 rock drills, Models FL-48 and FL-58 air feed legs, Model DH143 drill, 4½ and 5½-in. Mole Dril, sectional drill steel display. N. M. Fishback in charge.

General Electric Co.—Booth 90. Will feature new "100-line" of motor starters, new line of gear motors and transmission components, and most up-to-date Tri-Clad 55 induction motors. Overall display will feature suitability of above products to unusual operating conditions of crushed stone plants. R. D. Ketner in charge.

Haiss, George, Manufacturing Co., Inc., Div. of Pettibone Mulliken Corp.—Booth 86.

Harnischfeger Corp.—Booth 56. Booth background will feature P&H equipment. Exhibit will include: P&H Electronic adjustable energy control and P&H "Magnetorque" hoist system for electric shovels; a demonstration unit illustrating operating principles of "Magnetorque"; movies showing P&H machines on the job in quarry operations. Frank Hirner in charge.

HarriSteel Products Co.—Booth 50.

Hendrick Manufacturing Co.—Booth 65. Standard exhibit will show various types of perforated metals used in the stone industry. Samples of Wedge Slot and Wedge Wire will be on display. J. J. Risko in charge.

Hewitt-Robins, Inc.—Booth 68. Booth will include several items of materials handling and other types of equipment: 4 x 8-ft. vibrating feeder, 25 ft. length of 24-in. sectional conveyor, 4 x 12-ft. Vibrex screen. RoBINtronic Level Indicator, idlers and conveyor belting. W. B. Hicks in charge.

Ingersoll-Rand Co.—Booth 43. Plan to exhibit the following products: A CRAWL-IR self-propelled Wagon Drill mounting; JC4A large size Carset Bit Grinder; Complete line of down-the-hole drills and bits; Carset Bits; Jackhammers and accessories; Paving breakers and accessories; GYRO-FLO compressors and stationary compressors. Ted Slager in charge.

International Harvester Co.—Booth 92.

Iowa Manufacturing Co.—Booth 84. Exhibit features individual units of company's crushing line: CEDARAPIDS Twin jaw crusher and CEDARAPIDS Double Impeller impact breaker. New items will be covered by photos and information bulletins: Twin Shaft Stabilized Base Pugmill, Portable Secondary Crushing Plant, and new portable Pitmaster tandem crushing plant. A. C. Gossard in charge.

Jaeger Machine Co.—Booth 39. On display, rotary air compressors and self-priming, centrifugal pumps. Compressor is Model 365, Jaeger Roto, "air-plus," portable. A full-size, cut-a-way compressor, electrically operated, will show design features. Jaeger Model 4PE 4-in. electric pump will be shown, representing company's line of "sure-prime" self-priming centrifugal pumps. Submersible sump pump also will be shown under actual working conditions. A. C. Thomas in charge.

Jeffrey Manufacturing Co.—Booth 78. A Swing Hammer Mill, electric vibrating feeders and various chains and power transmission items will be shown in this booth. J. C. Price Taylor in charge.

Joy Manufacturing Co.—Booth 52.

Kensington Steel, Div. of Poor & Co.—Booth 58. Manganese steel castings as repairs for shovels and crushers. Also on exhibit will be replacement parts for tractors, including renewable sprocket rims. Earl Lerner in charge.

Koehring Co.—Booth 87. Feature 1-cu. yd. Model 405 shovel and DUMPTOR, an off-road instant-dump hauling unit. E. J. Goes in charge.

Link-Belt Co.—Booth 54. Exhibit will highlight product displays of series 50 and 100 idlers, silent and roller chain drives, speed reducers and other materials handling and mechanical power transmission components. Colored transparencies of heavier equipment will occupy the rear wall of the exhibit booth.

Link-Belt Speeder Corp.—Booth 53.

Will include an operating model of company's power hydraulic control system. Colored transparencies of in-action photos will backdrop the booth area; they will show the company's complete line of excavating equipment.

Ludlow Saylor Wire Cloth Co.—Booth 80. Samples of square-opening and long opening woven-wire aggregates screens to be featured. Of special interest: a model vibrating screen section showing a fine-mesh sizing screen supported by a coarse-mesh backing screen. John F. Steffens in charge.

Mack Trucks, Inc.—Booth 77.

McLanahan & Stone Corp. — Booth 73. See scale models, full size components and a general display background covering crushers, washers, feeders and allied equipment. M. Craig McLanahan in charge.

Manganese Steel Forge Co. — Booth 74. ROL-MAN woven screens and perforated plate, pins and bushings, skirt boards for screens and other wear plates, weldments for many applications in the crushed-stone field will be shown. Two new catalogues available at booth: one for ROL-MAN screens, the other for fabricated items. H. C. Doepken in charge.

Murphy Diesel Co.—Booth 69. Diesel Mech-Elec Power Unit, plus various cutaways showing engine design and construction features. Photos will show Mech-Elec and other diesel power units at work. Paul Schnetzky in charge.

Nordberg Manufacturing Co.—Booth 93. Exhibit will feature ¼-scale operating models of Symons cone crusher, rod deck screen, rod grizzly, bar grizzly, V-screen and Type F horizontal vibrating screen. Also, motion picture on operation and application of Symons cone crusher will be shown continuously; film will include recent applications of the Gyradisc crusher. L. F. Thompson and R. E. Schulz in charge.

Northwest Engineering Co. — Booth 47. Unusual color transparencies of company's shovels, draglines and clamshells on exhibit. No equipment. George Williams in charge.

Pettibone-Mulliken Corp.—Booth 86.

Pioneer Engineering Co., Div. of Poor & Co.—Booth 37. On display, a ¼-scale operating model of a complete crushing, screening and sizing plant for crushed stone producers. Model is authentic in every respect. Consists of a heavy-duty feeder, jaw crusher, two-deck scalping and sizing screen, triple roll crusher and a three-deck sizing screen together with conveyors, blending chutes and storage bins. Also shown will be company's line of aggregates washing plants and line of portable duplex crushing and screening plants. W. A. Rundquist in charge.

Productive Equipment Corp.—Booth 49. Will show a 4 x 12-ft. two-deck base-mounted GYROSET screen with deep side sheets. Unit on display will go directly to producer after the Show. L. H. Lehman in charge.

Screen Equipment Co. — Booth 42. Two vibrating screens will be on exhibit. One, to be announced at the Show, is a two-bearing patented screen that features easy removal of complete shaft assembly. It is a self-balancing unit with a free floating shaft. Also on exhibit, a 3 x 10-ft. triple-deck screen and a standard four-bearing SECO. N. J. Bleiser and C. S. Fielding in charge.

Simplicity Engineering Co. — Booth 91. On display, vibrating feeder grizzly and a two-deck vibrating screen. Grizzly feeder combines scalping and feeding into one operation, providing a smooth, controlled rate of feed. Ralph C. Johnson in charge.

SKF Industries, Inc.—Booth 66.

Smith Engineering Works—Booth 55. Will show working models of various items of company's equipment. H. H. Schaper in charge.

Stedman Foundry & Machine Co., Inc.—Booth 62. On exhibit, working model of Single Cage Disintegrator, showing the internal impact type principle of reduction. Nonplugging machine will handle high-moisture content material and operates well on material containing deleterious particles, making good separation by pulverization. L. A. Rhodes in charge.

Stephens-Adamson Manufacturing Co. —Booth 61.

Taylor-Wharton, Div. of Harsco Corp. —Booth 67.

Thew Shovel Co.—Booth 70. Plan to exhibit a 1¾-cu. yd. Moto-Loader. Will also have pictures of shovels and cranes at work and model of Joy Stick Power Controls. C. S. Weber in charge.

Thor Power Tool Co.—Booth 40.

Torrington Co.—Booth 57. Booth will contain various types of anti-friction bearings used in the rock products industry. Featured will be a self-aligning, spherical roller bearing used on screens, crushers, pulverizers, etc. Also on display: cylindrical roller bearings, tapered roller, ball and roller thrust bearings. G. E. Marvel in charge.

Tractomotive Corp.—Booth 76.

Tyler, W. S. Co.—Booth 63. A 4 x 10-ft. Type F-300 two-surface TY-ROCK vibrating screen will be featured. Also on display, RO-TAP testing sieve shaker and Tyler screen scale testing sieves, along with selection of Tyler woven wire screens. Wayne W. King in charge.

Universal Engineering Corp. — Booth 86. Working models of Wobbler Feeder, impact breaker, primary crushing plant, plus a swing-wing displayer containing photos and other illustrative material. Ed. Y. Jones in charge.

Vibration Measurement Engineers—Booth 51. Latest model of the Seismolog—a 40-lb. self-contained portable seismograph. Unit operation will be demonstrated, and plan of Seismolog Rental and Analysis Service will be explained. Jules E. Jenkins in charge.

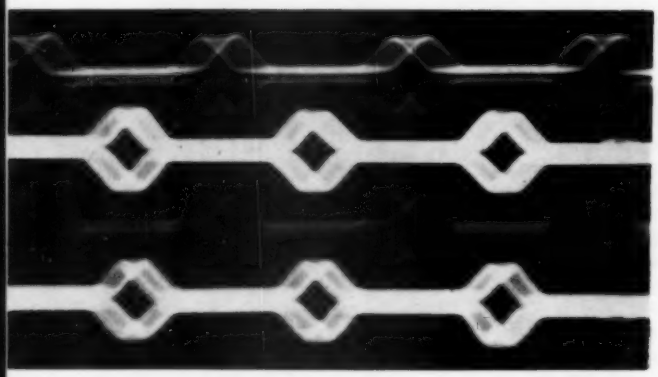
Werco Steel Co.—Booth 44. Booth will contain 3-ft. and 4½-ft. Tornado impact crushers, a new development in impact crushing, crusher jaws and rolls, pulverizer parts, plus Cross Special Analysis "CSA" perforated steel plate. Donald B. Massey in charge.

White Motor Co. — Booth 46. Will show large translite pictures of equipment. Will also show products of Reo Division. H. R. Stickel in charge.

Wickwire Spencer Steel Div. of Colorado Fuel & Iron Corp.—Booth 81.

END

(Preview continued on page 126)

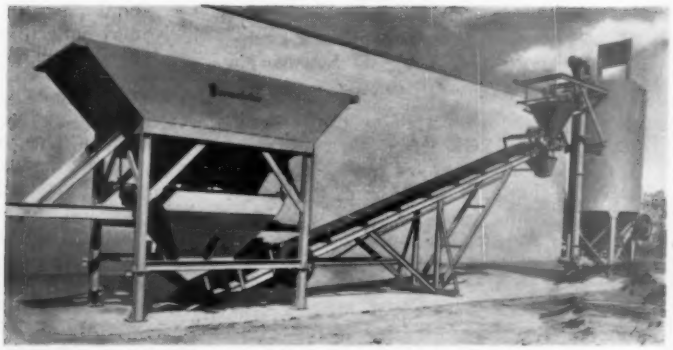


Sand and gravel, ready-mix show

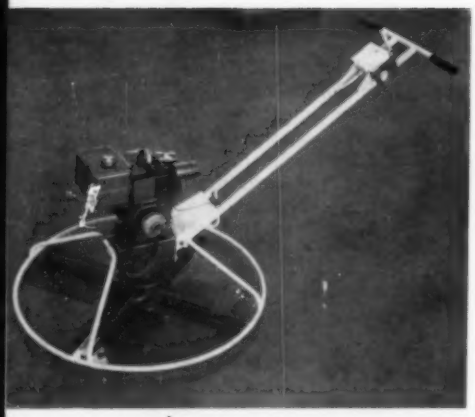
Duo-Screen—Unusual mechanism designed for handling difficult materials, for example, wet washed or naturally damp, sticky material—in particular, fines that otherwise can be handled only by a conventional heated screen. Unit operates with double oscillating action. Actually a double screen cloth in which a lag is mechanically introduced between the two screen sections. Barber-Greene Co.

Look for this brand new equipment . . .

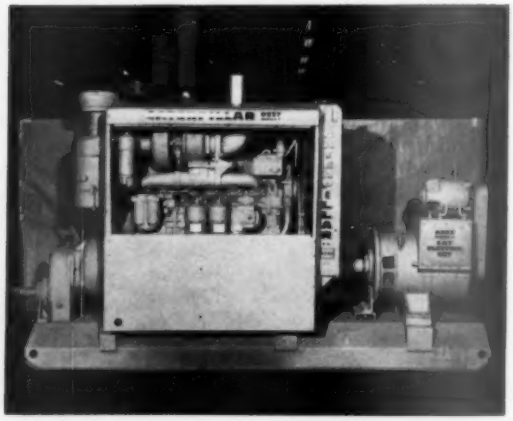
. . . at the Coliseum



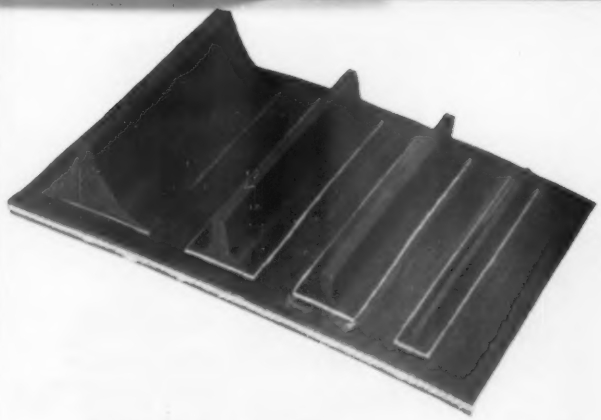
Portable batching plant—New plant features medium capacity concrete batching from 40 to 60 cu. yd. per hour with the portability of a two-wheel trailer. Composed of three separate units: aggregate bin, cement batch lift and belt conveyor. Optional fifth wheel and rubber tires on aggregate and cement bins. Hinged aggregate bin legs fold up during transportation. Chain Belt Co., Burmeister Div.



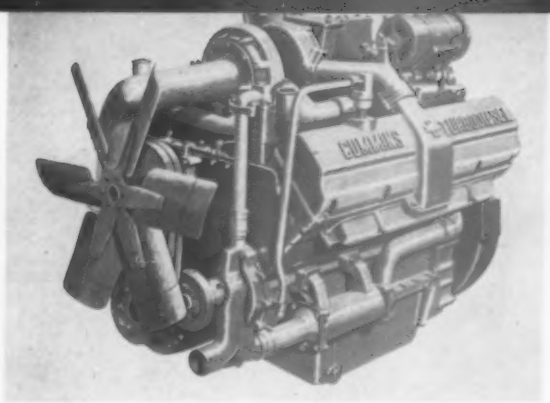
Concrete finisher—Completely new, Challenge Concrete Finisher features safety features as well as rugged construction. Has four blades and comes in two sizes: Model F-36 with a 32-in. trowel diameter and Model F-48 with a 42-in. trowel diameter. Both feature an independent hydraulic system for precision blade adjustment. All controls located on handle. Another feature—dual purpose blades that can be used for floating, finishing. Cook Bros. Equipment Co.



New drive unit—This is a new concept in power for crushing machines. It is an electrical and mechanical drive unit that takes power from both ends of the crankshaft, providing at the same time mechanical drive for crushers and electrical power for screens and conveyors. Caterpillar Tractor Co. Cat D337 (Series F)

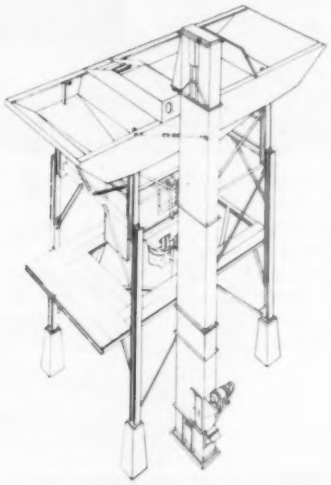


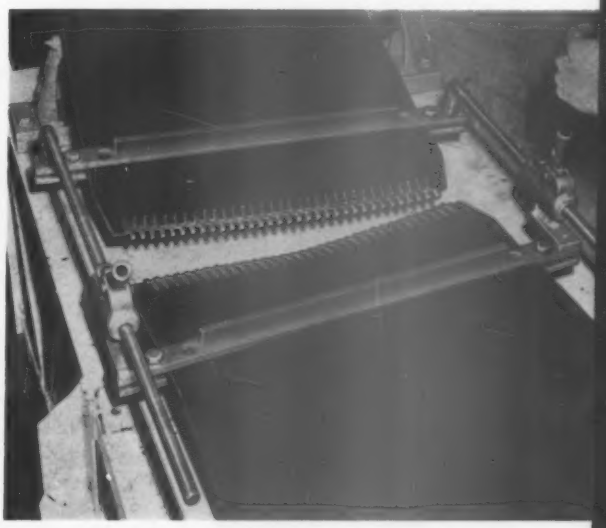
Rubber cleats for incline conveyor belts—Can be attached to either rubber covered, fabric or friction surface conveyor belting by the REMA process of vulcanization. Available in four heights: 7/16 in., ¾ in., 1 in., and 1½ in.—all in 36 in. lengths. Flexible Steel Lacing Co.



V-8 diesel engine—New V-8 diesel engine just announced, rated 375 hp. at 3,500 rpm. Said to give higher horsepower with shorter length and lighter weight than in-line engines. Easy access to parts and accessories contributes to reduced maintenance. Includes Turbocharger, tailored to match air flow with fuel flow characteristics of PT fuel system. Cummins Engine Co., Inc.

Complete batching facility—"Econoplant" batching setup, a new, economical and accurate transit-mix batching plant. Includes three aggregate compartments of 45 cu. yds. and one 70-bbl. cement compartment. 180 bbl. per hr. capacity cement elevator is furnished with the bin to handle bag or bulk cement. A manually operated Johnson Concentric Batcher weighs cement on a separate scale and discharges it within the aggregate for minimum dusting and maximum premixing. C. S. Johnson Co.





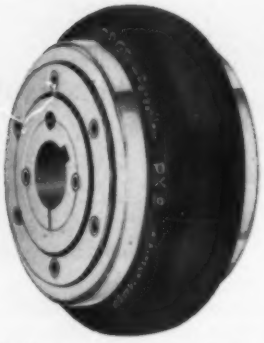
Belt clamps—Far-Pul belt clamps are new and modern. Wrench is only tool necessary for applying quickly to belt. Features one-man operation, all-steel construction. Pulls to fractions of inch, and folds compactly for storage. Flexible Steel Lacing Co.

Pre-mix plant—Noble-Mobile portable cement and aggregate plant, although not brand new in itself, is now set up for use as a premix plant. Also new addition is use of supplemental of aggregate storage, giving total of up to 150 tons of aggregate and 625 barrels of cement storage. May be loaded by crane, conveyor or scoop-loader. Noble Co.

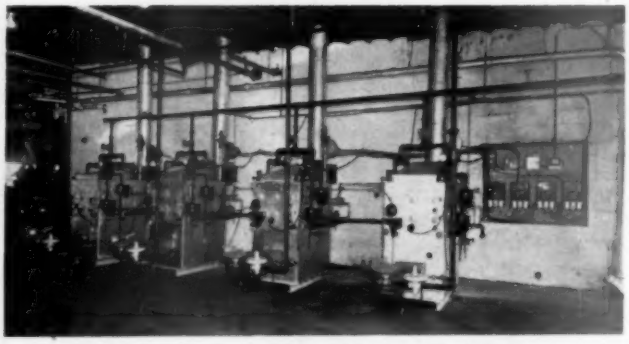
Turbine-type mixer—Unit is said to mix up to six times faster, and to mix so thoroughly that it actually homogenizes material. Designed by Swedish inventor, mixer has a doughnut shaped mixing drum, with drive mechanism located in center of drum. Mixer blades are positioned so as to braid material at the rate of 9 ft. per second. Direct charging is possible from any angle, since top of mixing drum is open. Discharge is through semicircular door in bottom of tank. T. L. Smith Co.

New concrete mixer and drive—Available in 5 to 7-cu. yd. sizes, new mixer features new truck-engine drive. Has right-angle drive to transmission, horizontal drive shaft connecting to drum-drive transmission. Drive shaft assembly takes power from offset drive to right-angle drive. Offset drive at front of truck transfers power from truck engine to drive shaft, which runs to the rear along truck frame. Westinghouse Transit Mixer Div., Le Tourneau-Westinghouse Co.

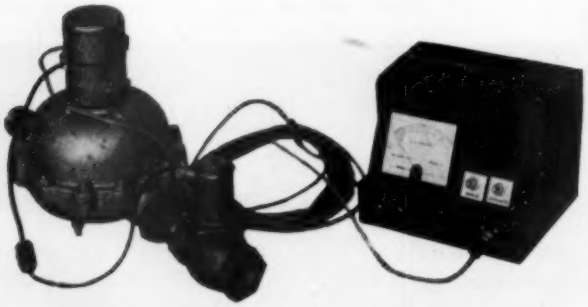
. . . at the Conrad Hilton



Shaft coupling—Para-flex is an entirely new and different type of shaft coupling that handles any kind of misalignment. Dodge Manufacturing Corp.

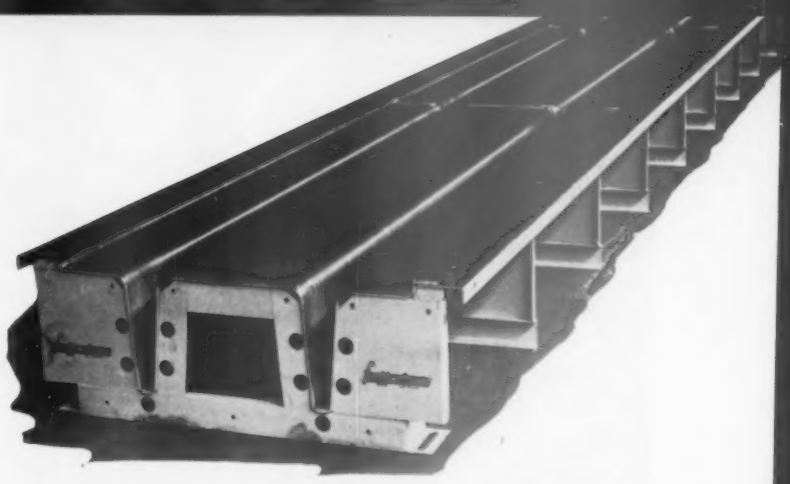


Boiler with combination burner—New Duo Boiler for ready-mix operation will feature combination gas-oil burner, capable of burning oil, LP gas, manufactured gas, mixed gas or natural gas—by merely flicking a switch. Forced draft burner requires little in way of a smoke stack. Includes new low water cut-off safety devices and new sloping hood for more effective draft and better operation of gas burner. Burkhart Engineering Associates, Inc.



Automatically resetting water meter—Just announced, new remotely controlled water-control system that eliminates the need of manually resetting for each batch. Operator dials amount of water required and presses an automatic button. After dialed amount of water has been discharged, the unit shuts off and resets to the same position automatically. Control panel can be remotely located up to 150 ft. from the flow meter-solenoid valve assembly. Water line size up to 3 in. can be accommodated. Dial calibration will be custom set to any range from 0 to 300 gal. Unit also has manual control. Edick Laboratories, Inc.

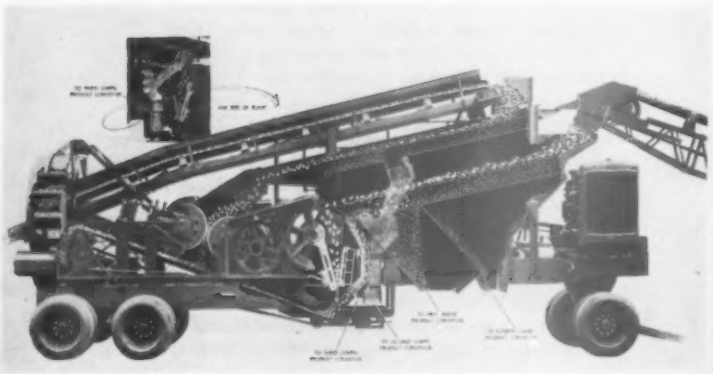
Storage bins—Complete new line of storage bins will be shown for first time. Data on circular bins will be available at company's booth. The Fairfield Engineering Company.



Prestressed concrete forms—First time displayed, turned-up edge Double-T forms and approved Bridge Beam forms. Both are Form-Crete all-steel casting forms. Double-T forms are designed to help the producer cast smooth-edge members without adjustment of side rail forming plates. Bridge Beam forms are designed to comply with recommendations for prestressed concrete beams for the Joint Committee of the PCI and AASHO on bridges and structures. Food Machinery and Chemical Corp., Florida Div.

Testing screen accessories—New Hydraulic Clamping Accessory automatically equalizes clamp pressure when used with Gilson Testing Screens, said to improve performance and increase testing speed and convenience. Hydraulic assembly eliminates threaded areas on clamp rods, and thus a wear point. New Door Enclosure Assembly, a single door with full-width piano-type hinges, completely closes the vibrating unit, thereby minimizing noise and dust. The Gilson Screen Co.

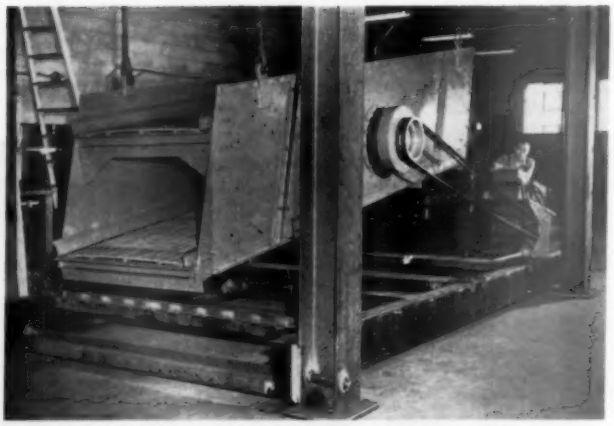
Automatic batching device—New ROBAC (Remote Operation By Automatic Control) device permits selective automation from a centrally located point, removed from the actual material handling operation. Also to be shown for the first time: Batch Control Printers, which are data recording devices designed to incorporate the advantages of accurate permanent records into automatic batch weighing systems. Hardy Scales Co.

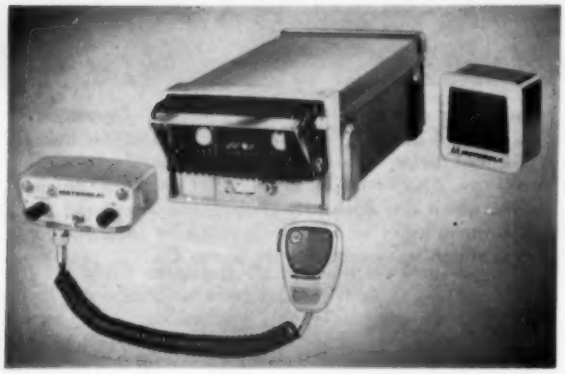


Portable plants—First introduced at Road Show, but first time shown to industry in this Show, will be company's new line of portable duplex crushing and screening plants. Units are capable of producing as many as four sizes of materials simultaneously or can be used as a single aggregate plant. A model of the crushing-screening cycle will be used to demonstrate the operating characteristics of the new portable plant. Pioneer Engineering Div. of Poor & Co., Inc.

Combination microphone-control speaker—A new concept in mobile communications equipment combines base station microphone, controls and speaker into a single, compact unit. For use with local or remote control mobile communications base station equipment. Designed to provide maximum mounting flexibility and operational versatility. Radio Corporation of America.

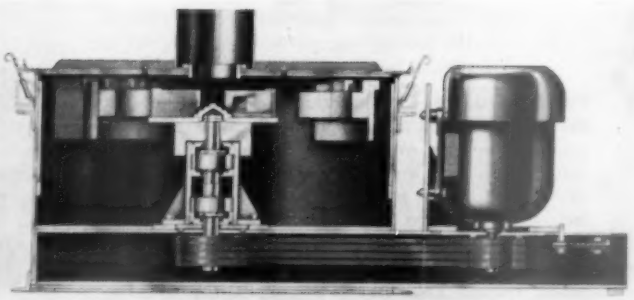
Two-bearing screen—First announced at the Show, a brand new two-bearing screen of new design. Patented feature is arrangement for easy removal of the complete shaft assembly for quick repair and return to service. Machine is a self-balancing unit with a free-floating shaft. The two bearings are lubricated with an oil bath. Shafts and bearings are larger than are generally used in machines of this type. Screen Equipment Co.





"T-Power" two-way radios—Motorola Company's line of radio-phones features transistorized power supplies for both the receiver and transmitter, which replace mechanical vibrators used in conventional power supplies. Newly designed to give modern appearance, with black finned radiators taking away heat from temperature sensitive germanium power transistors. Development in new two-way radios represents an important advance in power supply. Motorola, Inc.

New impact crusher—New line of 3 and 4½-ft. impact crushers—"Tornado"—uses a spinning impeller and breaker plates to break materials into cubical products. Feed to the units enters through a circular tube over a distributing cone. Spinning impeller shoes throw material outward at high speed against breaker shoes. Crushed product drops out bottom on both sides of the belt tunnel. The 4½-ft. unit recommended for feed up to 2 in. diam.; 3-ft. two-stage unit recommended when high percentage of fines is required. Werco Steel Co.



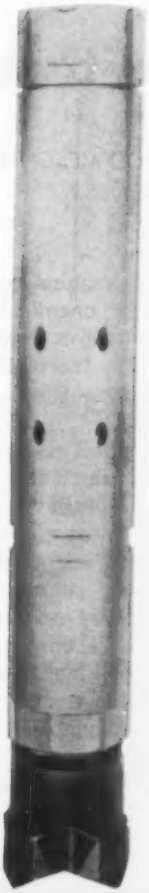
National Crushed Stone Convention and Exposition

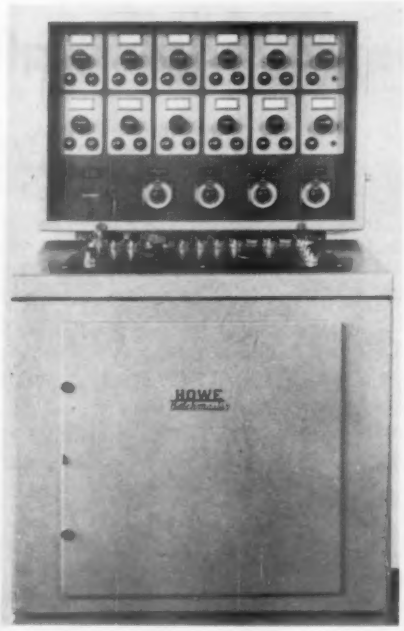
Deluxe model "Air-Trac"—Features of new drill—"Air-Trac" (R)—include company's DPAT hydraulic drill positioner that quickly puts the drilling mast into position, and creep-free hydraulic cylinders that maintain alignment even when drilling at an angle or on slopes. Can be equipped with 4 or 4½-in. drill. Drive control, hydraulic control and drilling controls are centralized for finger-tip operation. Gardner-Denver Co.

Look for this equipment . . .

. . . at the Conrad Hilton

Forged steel drop ball—Now available, a new forged "Cape Ann Alloy" steel drop ball, hand forged from a special abrasion resisting chromium, molybdenum alloy steel especially heat treated to withstand great shock, wear. Cape Ann Anchor & Forge Co.





Batchmaster control—New device automatically proportions materials being weighed, such as aggregates, sand, cement, water, etc. With the new device, a series of batches can be preset on individual plug boards. The latter may be inserted into the panel so that the operator can obtain any desired batch without resetting cut-off adjustments. The Howe Scale Co.

Percussion-type mole drill—New drill makes 4¾ in. to 6½-in. water well, blast and seismograph holes with speed. Unit is said to add power and versatility to rotary-type drill rigs. When hard formations are encountered, Mole Dril may be attached to the drill stem in place of the rotary bit. Gardner-Denver Co.

Waiting—

10,000,000 tons of limestone

and Warner Co.'s going after it with

By ELWOOD MESCHTER

THE WARNER COMPANY has nearly exhausted its deposit of metallurgical limestone at the 600-ft. level in the Bell mine at Bellefonte, Pa. after 37 years of operation. Now the company is developing the 960-ft. level below ground where more than 10 million tons of rock are available on the Warner property.

The famous Bellefonte seam averages about 60 ft. thickness of high-grade limestone encased in a limestone ledge about 150 ft. thick. At the surface this ledge slopes into the ground at about 60 deg. from the horizontal, but it gets steeper as it goes deeper until at the new 960-ft. level the ledge is nearly vertical. However, geologists suggest that this deposit makes an abrupt bend and becomes nearly horizontal about 2,000 ft. below ground.

All the rock in the deposit is slate gray and the pure, 98½ percent carbonate rock cannot be distinguished from the low-grade limestone on each side. It is a different story with the chemical analysis which changes radically within a few feet. The stone in the hanging wall has more than 10 percent silica and insolubles; the foot wall more than 2 percent.

The Warner mining engineers will continue to use the stope mining techniques which they have developed over the years, and which have proved to be the most economical and efficient methods of getting out the huge volumes of rock needed by their lime kilns. A stope is a huge pocket or silo from which the solid rock is drilled and blasted and dropped to the bottom where chutes draw the stone into trains of mine cars. Safety-conscious engineers of the Warner Co. have worked out a system of raises and sub-drifts to enable the men to work each stope from the top downward, rather

Please turn to page 134

Here's where the broken stone starts its trip from the seam to the lime plant

stope mining methods and belt conveyors

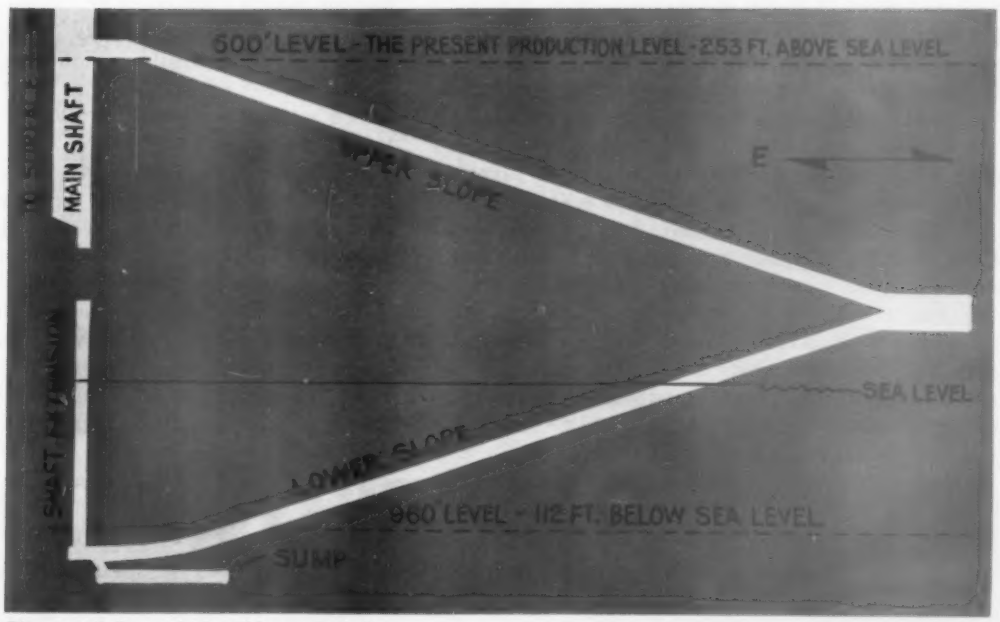
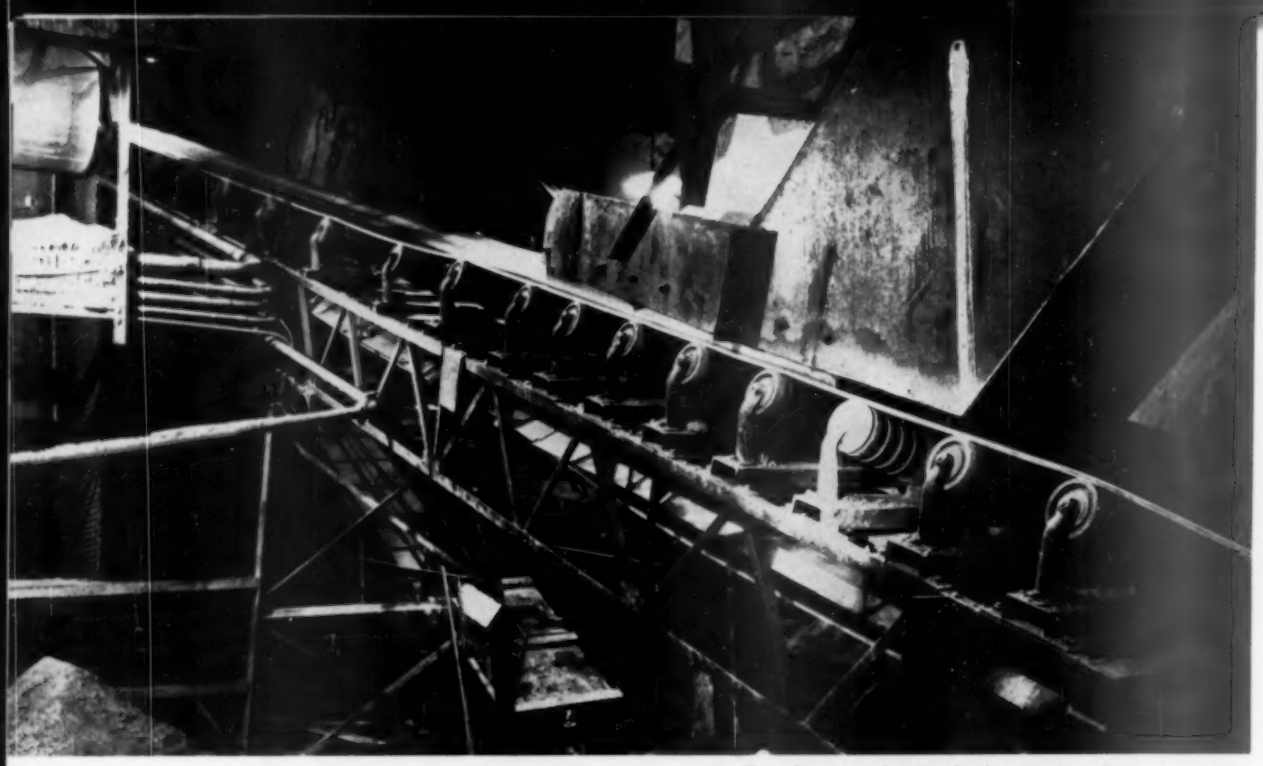


Diagram of slopes which will house the belt conveyors



Transfer room showing loading section of upper conveyor

10,000,000 tons

continued . . .

than the more hazardous method of working from the bottom upward.

Forty stopes have been blocked out at the new level, with each stope about 250 ft. deep, 300 ft. long and the full width of the seam from a minimum of 35 ft. to a maximum of 70 ft. The depth of each stope has allowed sufficient roof to support the floor of the old 600-ft. level and enough bottom to support the weight of blasted rock above the main drift at the new level. The walls between each stope are thick enough to enclose a permanent man-raise for access to each new stope.

Stone from the existing level has been brought to the surface in a skip hoist with the headframe and storage bin on the surface. Each four-wheel skip bucket was loaded from a skip-loading pocket in the mine which received the rock from the mine cars, and the skip buckets travelled about 900 fpm. At the surface the rock was withdrawn from the bin with an apron feeder and carried to the lime kilns on a belt conveyor system.

Discharging blasted rock from stopes 260 ft. below the existing operating levels posed one problem: How to get the rock to the surface.

The obvious solution was to extend the skip hoist deeper. But to maintain the same volume of production the speed of the skips would need to be increased beyond 900 fpm., the maximum safe operating speed. The angle of the skip tracks would get steeper as the tracks followed the seam of rock in the footwall, and the skip tracks would become nearly vertical at the loading pockets just below the 960-ft. level. This condition would require hold-down rails which would limit skip speeds as well as new, heavier hoisting equipment which would be installed while the existing hoist was still operating.

Sinking a skip shaft would be a major undertaking while the existing equipment was still operating. It would be slow and difficult work to raise or to sink a new skip shaft and the hazard and expense would be very great.

The most economical method of opening and operating the new level proved to be a slope drift system to house a belt conveyor. Now the work has been completed at a cost of little more than $250,000 including equipment, but this relatively modest cost was only one of the advantages of the project. The work was done at a leisurely pace over a period of three years. No new men were added to the labor force because of the additional work and no premium time was necessary. There was no interruption to production at the old level since

Please turn to page 137

Other TL-20D features include:

HYDRAULIC TORQUE CONVERTER DRIVE • TIP-BACK BUCKET • POWER STEERING • 4-WHEEL DRIVE • 4-WHEEL POWER BRAKES • "HI-TRACTION" DIFFERENTIALS • STRONG, PIN-CONNECTED PLANETARY AXLES • 4-WAY ADJUSTABLE SEAT • REAR-AXLE DISCONNECT • EXTRA STABILITY • "BUILT-TO-TAKE-IT" CONSTRUCTION.

TL-20D TRACTOLOADER® 2¼ cu yd, heaped • 100 diesel hp • Weight: 22,100 lb

MACHINE ON THE GO

Loader Operation Simplified by Tractomotive... Result: Increased Production

Here you see the only transmission shift lever that is necessary on the TL-20D TRACTOLOADER.

With this single lever, your operator has full control of the TL-20D's full power-shift transmission. He can shift into and out of any gear "on the go" — forward or reverse. There is no speed range lever, or any other shift lever, to slow him up. And this single-lever control is EXCLUSIVE WITH TRACTOMOTIVE.

Because your operator's work is simplified . . . your production is sure to be higher. Let a demonstration convince you. See your Allis-Chalmers construction machinery dealer.

THERE IS A FAST-WORKING TRACTOLOADER® TO FIT EVERY JOB — 5 MODELS — ½ cu yd to 2¼ heaped . . . two and four-wheel drive.

* * *

See the TL-20D at the Sand and Gravel and Ready-Mix Convention — Tractomotive Booth No. 49, Chicago Coliseum. We will also be at the Crushed Stone Convention. Let's talk over your loading problems.

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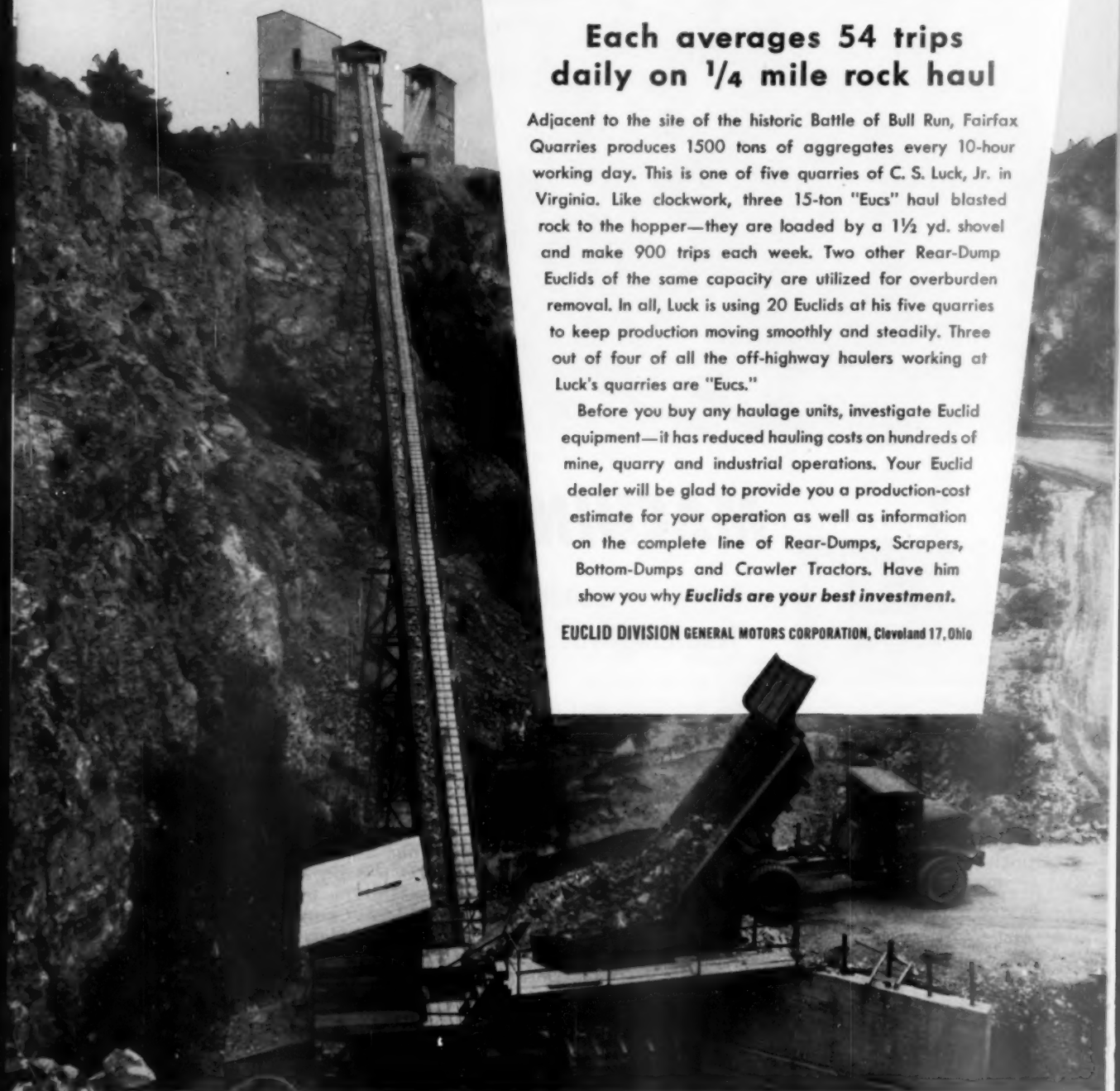
3 "Eucs" haul 150 to 175 loads per day at Fairfax Quarries



Each averages 54 trips daily on 1/4 mile rock haul

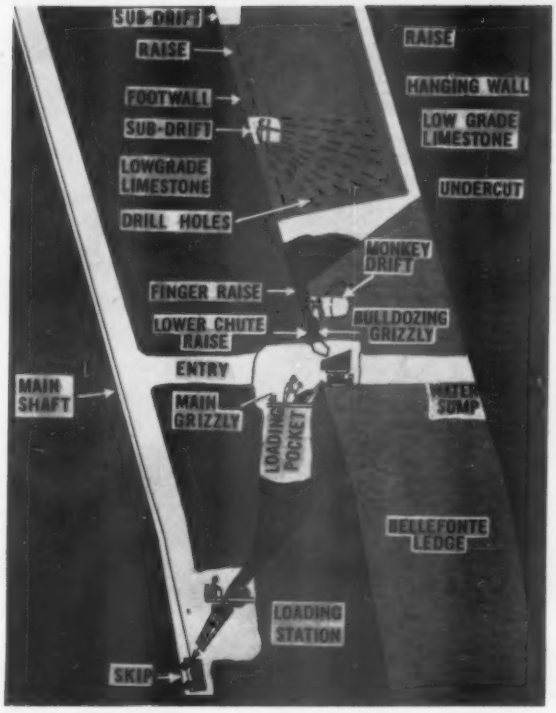
Adjacent to the site of the historic Battle of Bull Run, Fairfax Quarries produces 1500 tons of aggregates every 10-hour working day. This is one of five quarries of C. S. Luck, Jr. in Virginia. Like clockwork, three 15-ton "Eucs" haul blasted rock to the hopper—they are loaded by a 1½ yd. shovel and make 900 trips each week. Two other Rear-Dump Euclids of the same capacity are utilized for overburden removal. In all, Luck is using 20 Euclids at his five quarries to keep production moving smoothly and steadily. Three out of four of all the off-highway haulers working at Luck's quarries are "Eucs."

Before you buy any haulage units, investigate Euclid equipment—it has reduced hauling costs on hundreds of mine, quarry and industrial operations. Your Euclid dealer will be glad to provide you a production-cost estimate for your operation as well as information on the complete line of Rear-Dumps, Scrapers, Bottom-Dumps and Crawler Tractors. Have him show you why ***Euclids are your best investment.***

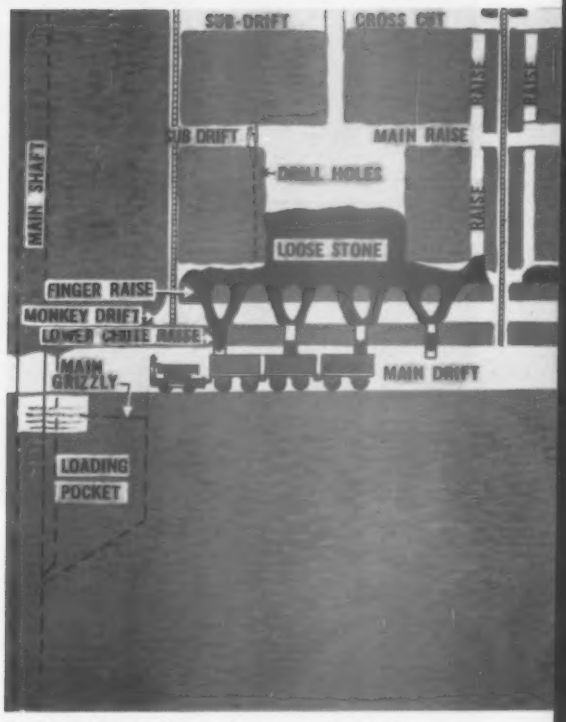
EUCLID DIVISION GENERAL MOTORS CORPORATION, Cleveland 17, Ohio

Euclid Equipment

FOR MOVING EARTH, ROCK, COAL AND ORE



Cross section of Warner Co.'s unique method of stope mining at the Bell mine



Sectional view of Warner Co.'s operations in the famous Bellefonte limestone seam

10,000,000 tons

continued . . .

waste rock was stored and withdrawn on Sundays. Slopes were safer to operate than shafts and there were no lost time accidents, and drilling and mucking crews could operate together safely.

The new conveyor slopes were laid out in two sections. The upper slope was driven southward on about the same bearing as the main drift and at a decline of about 18½ deg. from the horizontal. When the 800-ft. level was reached a transfer room was made, and the direction of the drift changed. This was driven downward and to the north to about the 1,000-ft. level.

This difference in elevation of about 40 ft. was necessary to allow the mine cars to dump into hoppers with enough headroom to feed a crusher above the belt conveyor. Some additional height was needed where the lower belt discharges to the upper belt in the transfer room and the flow of material doubles back on itself.

The slope drifts are about 8 ft. wide, 12 ft. high. The transfer room is about 25 x 25 ft. in section and about 60 ft. long. The edge of the conveyor frames were located on the center line of the slope, leaving plenty of room for a man skip and tracks on the other side.

Actual construction of the slope was from the top down. The blast holes were drilled by a home-made four-wheel jumbo which carried drill steel, tools and a high-head sump pump. As the drift advanced the roof was bolted, track laid and the conveyor put into place to handle the muck back to the loading hopper at the 600-ft. level. As a temporary tail section was moved down closer to the face at each advance, a new 20-ft. section of conveyor was put into place and a section of temporary conveyor belt spliced in.

The conveying system is a pair of 36-in. wide belts on 20-ft. prefabricated section frames. All of the upper conveyor frames were assembled at the factory and shipped in one piece. While these pieces were easy to handle in shipment, they proved to be extremely awkward to handle in the confined quarters in the slope. The sections of conveyor frame for the lower conveyor were knocked-down for shipment and were assembled in place in the lower slope. The upper drive support was an all-welded frame, the lower drive frame and transfer frame were knocked down for shipment.

The two conveyors were planned to be as identical as possible in every part. The upper conveyor is about 676 ft. long, the lower about 711 ft. long. The additional length of the lower conveyor was

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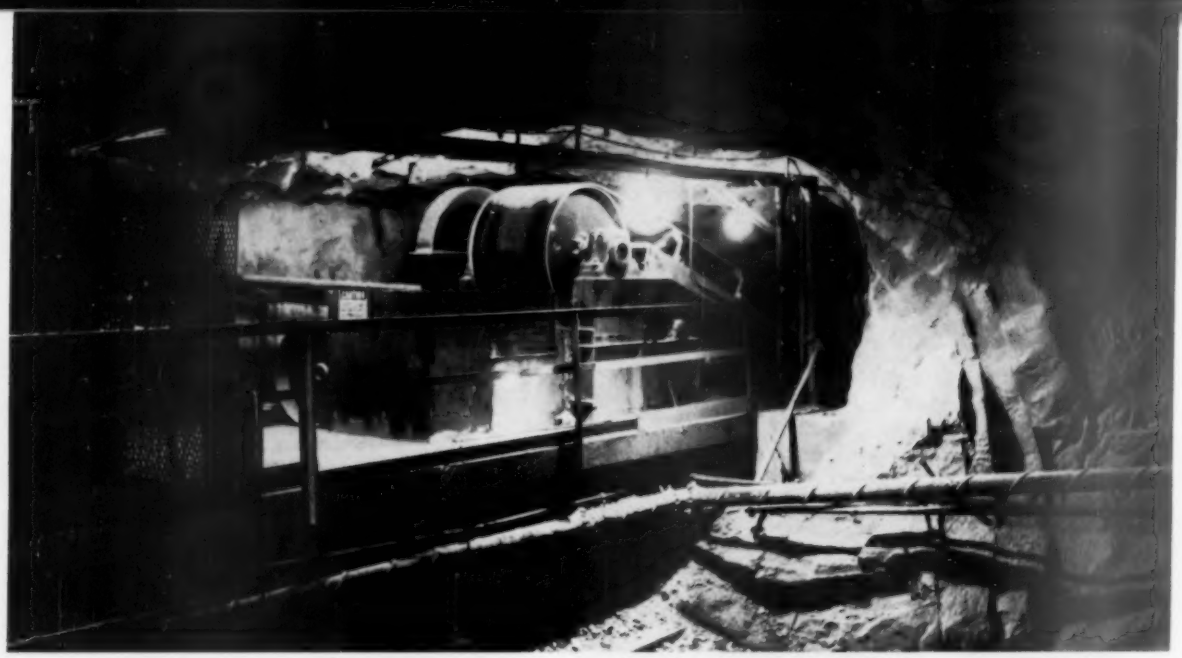

Here the upper conveyor discharges into the skip-loading pocket at the 600-ft. level

10,000,000 tons

continued . . .

necessary to permit a horizontal run under the crusher and a vertical curve in the belt. Belt speeds are about 360 fpm. with a nominal capacity of about 1,000 tph. of minus 8-in. rock.

The lower belt conveyor is loaded under a 30 by 60-in. single roll crusher which makes minus 8-in. rock. The crusher is fed from a 100-ton loading pocket by a 60-in. x 20-ft. heavy-duty steel apron feeder. The hopper is loaded with the blasted rock brought out from the stopes in trains of 16-ton mine cars which are automatically side-dumped.

One of the major advantages of belt conveyor systems is their ability to handle large tonnages of material without attention. However, the slightest mishap in the confined spaces of the slopes would plug them with rock. A number of safety devices were installed as precautions against any possible emergency.

Particular attention was paid to the transfer chute between the lower and upper conveyor. A high-level bin control was installed to signal any arching of rock in the chute; any build-up here would cut the power to the apron feeder, crusher and lower belt and would prevent rock spillage in the transfer room. Tell-tale switches between the skirt boards of each conveyor at the loading end would signal any overload of material on the belts. The management is seriously considering the installation of television transmitters to keep an eye on these critical locations.

The right-angle reducers at the head of each conveyor are equipped with built-in backstops which hold the loaded belt from running backward when the power is cut for any reason. Zero speed switches on the tail shafts of each conveyor will cut the power to the equipment just ahead of each conveyor if the belt itself or any part of the drive after the reducer should fail while operating.

The drives of each conveyor are 100-hp. motors direct coupled to the right angle reducers. Final reduction to the headshaft of the conveyor is made with a heavy 3-in. pitch double-width finished steel roller chain. The 48-in. diam. welded steel pulley is herringbone rubber lagged to maintain belt traction in the damp atmosphere of the mine.

Electric power is brought to the 600-ft. level at 2,300 v. where three 100 kva. transformers reduce it to 400 v.

The belt conveyor is flexible enough to handle additional capacity if needed. The 360 fpm. belt speed can be increased more than 30 percent.

It may not be another 37 years before the rock at the new level is worked out, but the belt conveyor system can readily be extended. This can be done by duplicating the slopes and the conveyor equipment at any lower level.

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Single roll crusher	Pennsylvania Crusher Co.
Slope belt conveyor assemblies (2)	Hewitt-Robins
Slope belt conveyor motors (2)	General Electric Co.
Slope belt conveyor reducers and couplings	Falk Corp.
Transformers (3)	General Electric Co.
Surface apron feeder	Chain Belt Co.
Surface belt conveyor	Jeffrey Mfg. Co.
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END

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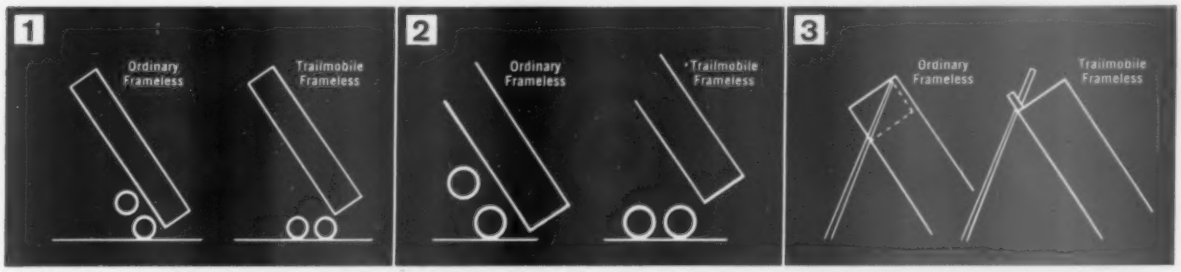
allows up to 3000 lbs. extra payload · offers five unbeatable features



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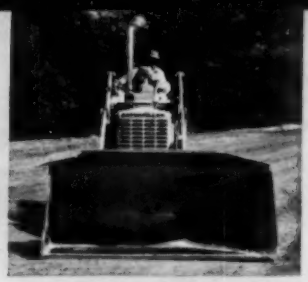
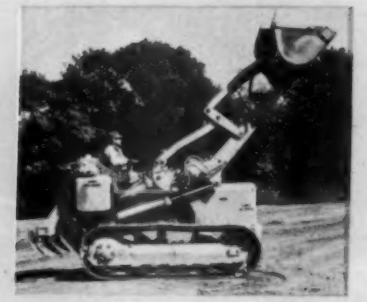
Here  comes...

the TRAXCAVATOR'S  new...

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	No. 955	No. 933
Bucket capacity	1⅛ cu. yd.	1⅛ cu. yd.
Overall width of bucket	96"	86⅛"
Overall height, side dump	17' 5½"	15' 6 1/16"
Overall height, level	14' 6"	12' 11 1/16"
Left side dump reach	24½"	25½"

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A NEW DIMENSION IN LOADER VERSATILITY

Sand is sluiced to a pump in the pit by this hydraulic monitor at Pacific Clay Products Co.'s plant, Camanche, Calif.

Industrial sand in the West

A progress report with special emphasis on what ideas and techniques are being used

By WALTER B. LENHART

IN THE RAPIDLY EXPANDING economy of the West it is difficult to keep up with the progress being made by industrial sand producers, many of whom are relatively new faces in the industry. Accompanied by Dr. Clarence R. Wolf, president of both the New Jersey Silica Sand Co. and the National Glass Sand Corp., I have talked to many of these producers during our 2,500-mile field inspection trip. With Dr. Wolf's assistance, I have made these observations:

Technologically, the western producers are, in glass and some of the specialties, considerably ahead of the eastern operators.

In the past, the higher grades of foundry and core sands have been shipped to the west coast cities by boat. But the trend now appears to be definitely in the direction of western producers adapting themselves to the foundryman's needs and supplying those needs from western deposits.

And with foundry, glass and other types of industrial sand, the production per man in the West appears to be somewhat higher than that of some of the older producers. Some western plants appear to run without any manpower at all, and pit operations also use a minimum of labor.

Though the eastern producer may have the advantages of larger deposits near huge industrial centers, and a raw material lower in iron, the use of modern beneficiation techniques is keeping the western users happy with products that improve from year to year.

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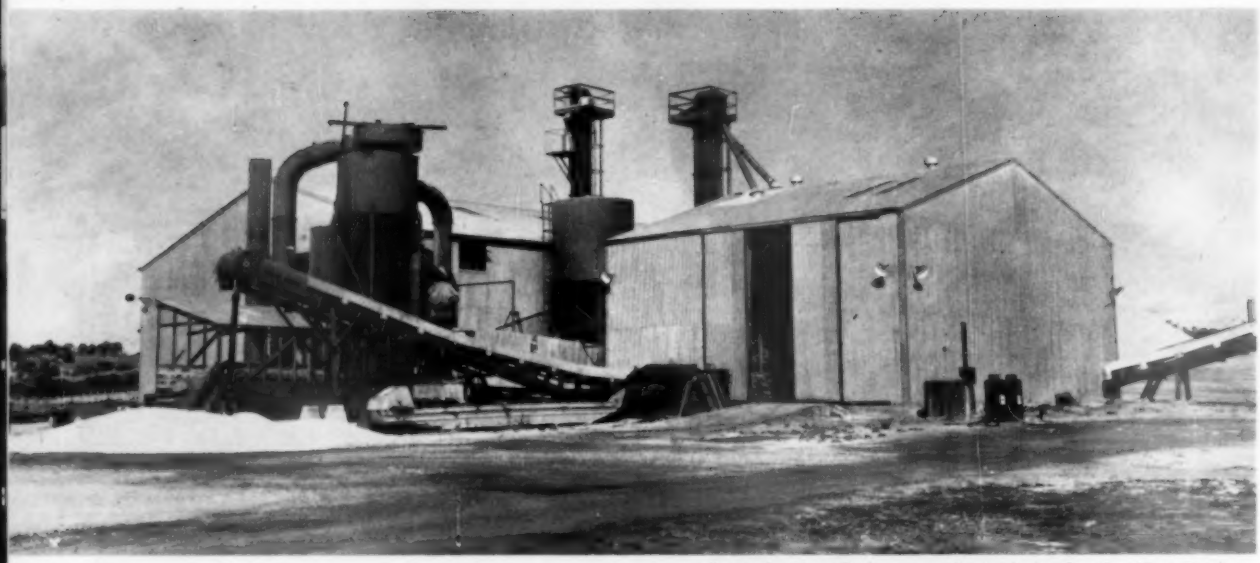

General view of the new plant of the Pacific Clay Products Co., Camanche, Calif. High grade industrial sand is processed here using the froth flotation process. No clay is recovered

Industrial sand review

continued from page 141

Froth flotation has been used in the western metal mining industry since about 1910. Over the years a more or less itinerant workman known as a mill man has emerged in the mining fraternity. This type of skilled labor has operated practically all types of flotation machines on all types of metallic ores. Show a good mill man where the electric starting switches are, give him a few words on the reagent set-up and he can take over. In a matter of a day or so he will have worked the bugs out of the new plant and put it on a production basis.

Obviously, then, it is far easier for a western producer to get established quickly in flotation, for essentially the technique is exactly the same as in the mining industry. Eastern producers do not have the advantage of this skilled manpower. And western manufacturers of flotation equipment have not fully sensed the difference in East and West to the extent of giving the new eastern sand operator special help in finding solutions for his flotation problems.

The latter, when he gets a carload of flotation machinery, many items of which he never saw before in his life, has to install the equipment from strange drawings and start operations from scratch. This usually holds up the production of the better grades of glass sand for a year or more, and the eastern producer is not happy. Servicing a new flotation plant for a new face in the industry, especially in the East and the South, is a must if the industry is to advance as fast as it should, or as fast as it has in the West.

The western producer, on the other hand, is not at all familiar with the needs of the foundry industry. Core sand, and foundry sand for the steel, brass, aluminum, radiator and other industries, place the western operator in almost the same position as the easterner. With these markets he is starting from scratch and learning the hard way.

We suggest a trade: let the westerner help solve the easterner's flotation and beneficiation problems, and the eastern producer help the westerner with foundry and specialty sands. The distance between the two would keep competition from being a factor in the exchange.

Some of the eastern companies with operations in the West belong to the National Industrial Sand Association, but of the strictly western operators, to our knowledge not a single one belongs to that association. We suggest that one of the industrial sand meetings be held in the West. Our choice would be Las Vegas, Nev., not entirely because of the social life but also because close to that city are two up-and-coming industrial sand operations which help serve the southern California markets.

Please turn to page 144

Turning Tailings into Ore!

This NAYLOR spiralweld pipe is being used in dredging operations to convert tailings into ore.

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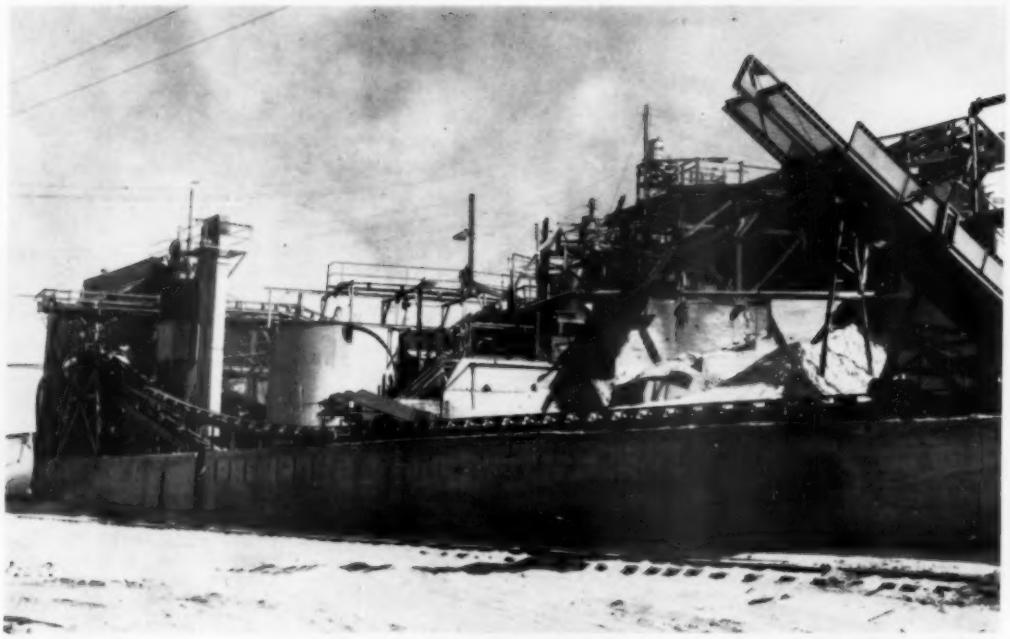

Washing and sand processing section of the J. R. Simplot Co.'s operation at Overton, Nev.

Industrial sand review

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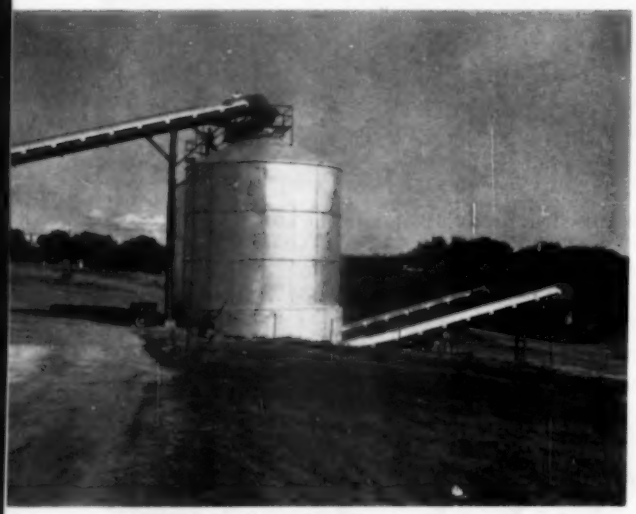

Load out facilities of Pacific Clay Products Co.'s Camanche, Calif. plant

These western men have information that the industry can use.

Ideas and techniques. Froth flotation was practiced to remove feldspar from industrial sand and to prepare a marketable feldspathic material, and froth flotation to reduce the iron content was in evidence in many instances. Machines used included Fagergren, Fahrenwald, Coke and others. The Coke flotation machine is a development of Hugh H. Coke, manager, Pacific Clay Products Co. It resembles a Fagergren somewhat but has certain refinements which permit handling a coarser feed than normal at high capacities.

The deposits west of the old gold mining town of Jackson, Calif., in the Mother Lode district, are important to the San Francisco Bay areas. The deposits of sand-clay are deep and quite extensive. One operator attempted to beneficiate gold tailing piles, or mill rejects, and to sell the material for industrial sand uses, but the plant is now not operating pending more metallurgical test work.

Acid treatment of sand except as a prerequisite for flotation conditioning was not in evidence. Possibly the use of hydrofluoric acid as a sand grain cleaner would be advantageous if a cheap source of supply was available.

In the Overton, Nev. district a considerable

Please turn to page 146

Chicago Gravel Co. feels that one good Manitowoc deserves another — that's why the company recently added another Manitowoc Model 2000 Clamshell to move gravel at its Rockdale, Ill., plant. Mr. G. E. Singletary, General Superintendent says, "We purchased this new Manitowoc 2000 Clam because we know we can count on simplicity of design and long operation, without much maintenance. The rig is very easy to convert from dragline to clam and back again. We have changed as often as *three times in one day* to suit some particular operation at hand. The line speed is well-suited for either bucket and the operator likes the machine very much."

Consistent high output is the rule with this rig. The Model 2000 moves 800 to 1000 tons of gravel daily, in addition to dragline excavation, and has put out as much as 1200 tons a day when loading railroad cars. The clam is also used for charging bins with gravel and stockpiling it for future orders.

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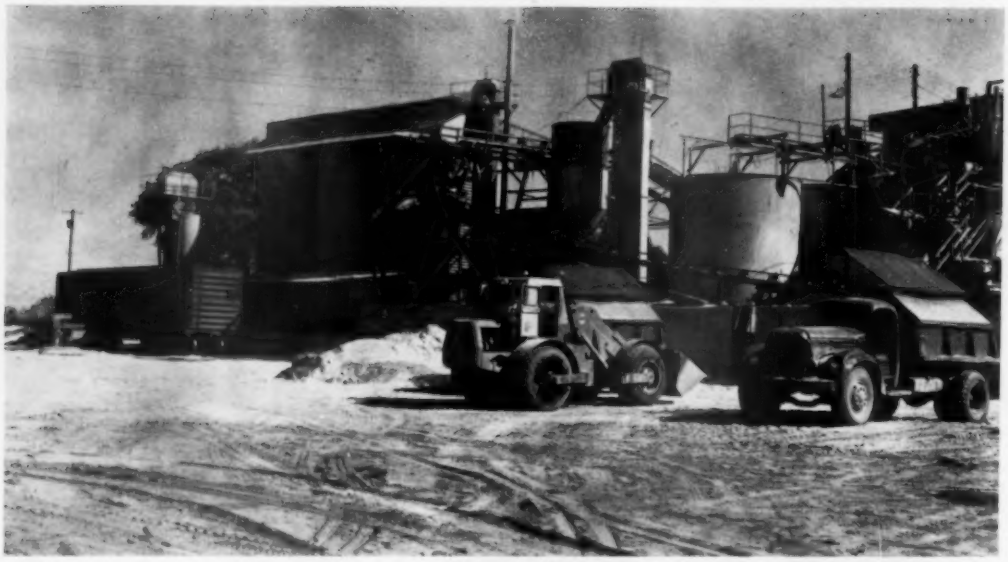

Drying and shipping section of the J. R. Simplot Co.'s silica operation at Overton, Nev.

Industrial sand review

continued from page 144

amount of clay is scalped out of the matrix at the pits before trucking to the plants. At all the plants we visited clay removal was a major problem.

At the plants where flotation had not yet been practiced, test work was being carried out with this in mind. A new plant started preliminary operations east of Oakland in the Brentwood area.

The nature of the reagents used, the amounts used, and the place of application both for flotation and conditioning appear to follow a pattern developed by staff members of the operating companies, aided by Otto Brown, metallurgical engineer for American Cyanamid Co., and metallurgists with the Western Machinery Co., Denver Equipment Co., the Galigher Co., Southwestern Engineering Co., and others.

Grinding in a ball mill before flotation was practiced in one instance to reduce grain size and to aid in clay attrition. Attrition machines were used in two instances to help clean the sand grains ahead of flotation. Hydraulic sluicing of the pit material was practiced in one instance, and a dragline was used in another. The pump at the hydraulic operation delivered 850 gpm. at 190 psi. at the nozzle for the sluicing, using a monitor. This monitor is so designed that it has little or no back-thrust at the nozzle and can be swung quite easily in any direction.

The sluiced material was pumped from the pit to a trash screen and the sand was dewatered in a 54 in. diam. spiral. Then the sand was stored over a reclaiming tunnel. Gravity gates fed to the reclaim belts and the operators had no trouble with arching of the damp sand.

Liquid cyclones were used in two instances to make a separation between the clay and the sand. In one place soaking in a large agitated tank prior to the liquid cyclone was practiced. The sand from that liquid cyclone was dewatered as a final clay removal project, ahead of flotation. There appeared to be considerable interest in water scalpers for better sand classification.

Finished sand from the float cells after dewatering was sometimes filtered before sending the sand to the dryers. In one instance a company-made rotary filter was used. No blow-down was used on the filter; the sand was simply scraped from the drum, leaving about ½ in. of sand on the face of the drum to protect the cloth and to aid in filtering. This removed the water to within the seven percent range. Rake-type dewaterers were also in evidence. Shipment of wet sand has practically stopped in the West. At the plants we surveyed, rail shipments accounted for the bulk of the sales. Magnetic separators were in evidence in several of the plants.

Production of silica flour was practiced only at one plant we visited. The mill used a heavy porcelain grinding media made at Boulder, Colo. This grinding ball, because of its high unit weight, increased the capacity of the mill over 50 percent as compared to the use of conventional pebbles. The porcelain ball is pure white in color and contains

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Porcelain grinding balls are used in the large diameter dry grinding mill (note air separator on the roof) at the Del Monte Properties Co., plant, Pebble Beach, Calif.

Industrial sand review

continued from page 146

no iron. Liners of similar material can be obtained from the same source.

The porcelain balls are more costly than the pebbles but in this instance their use was built around the thesis that it was necessary either to install more grinding equipment (at an estimated cost of $250,000), or use the porcelain balls, to get the added capacity.

One outlet for silica flour that is prevalent in the East but practically nonexistent in the West is in autoclaved concrete block. There are autoclaves in use in Salt Lake City, Tacoma, Seattle and Albuquerque, with many rumors of Los Angeles getting into the act. This may mean an increase of grinding facilities in the West. Some of the autoclave operators use bank-run sand in the finer sizes. Others use pumicite and other pozzolanic materials. One often hears of small silica flour grinding operations either pending, proposed, or operating but the major productions are sizable in daily tonnage and serve the larger western industrial cities.

North of Boise, Idaho, is an industrial sand operation that was recently acquired by a strong company and plans are said to be on the agenda for extensive changes. Similarly, a plant north of San Diego was recently taken over by an older eastern operator and plans were said to be such as to bring the operation in line with more modern practices. Clay from one plant was sent to a second where it was beneficiated for ceramic uses. Depletion of an important deposit in California may terminate its life in a few years.

Concentrating tables were used in one plant to lower the iron content of the sand. The table feed was from multispigot sand sizers. At another, company-made water scalper sand classifiers were in use. The outlet from each pocket was controlled by a preset, hand-operated valve arrangement. The classifiers were used essentially as de-slimers to get rid of clay before dewatering.

At one plant a small concentrating table took a small cut out of the finished sand from the flotation machines. If the iron content of the sand crept upwards a black tail would show on the table. This permitted the operator to quickly adjust his flotation cells and not wait for a chemical analysis to show his mistakes. Pilot tabling is standard practice in many of the old metal mine flotation plants.

A chemical coagulation agent to settle slimes sent to the water reclaiming pond was used in two instances, with startling and favorable results. One used about 20 cents worth of the chemical per day. Two large settling ponds were in use, but after adding the coagulant roughly 80 percent of the area of the first pond was water clear. Slime settling was extremely rapid and efficient. Pump wear when dirty water was recirculated was an important factor.

MAJOR EQUIPMENT REFERENCE

Gold dredges (jigs)	Yuba Mfg. Co.
Fagergren flotation cells	Western Machinery Co.
Attrition machines	Western Machinery Co.
Sand dewaterer, 54 in.	Western Machinery Co.
Fahrenwald flotation cells	Denver Equipment Co.
Monitor, Intelli-Giant	Chicksan Tool Co.
Hydraulic monitor's pump	Kimball-Krough
Trash screens, eight mesh, Leahy	Deister Concentrator Co.
Liquid cyclones, Krebs	Equipment Engineers, Inc.
Magnetic separator	Dings Magnetic Separator Co.
Dryer	Madsen Iron Works
Wet ball mill (Hardinge)	Hardinge Co.
Dry grinding mill for silica flour	Hardinge Co.
Air separators on above mill	Hardinge Co.
Rake dewaterers	Dorr-Oliver, Inc.
Porcelain grinding balls	Coors Porcelain Co.
Concentrating tables, Wilfley	Mine & Smelter Supply Co.
Chemical settling agents	
No. 2026	American Cyanamid Co.
Separan 2620	The Dow Chemical Co.

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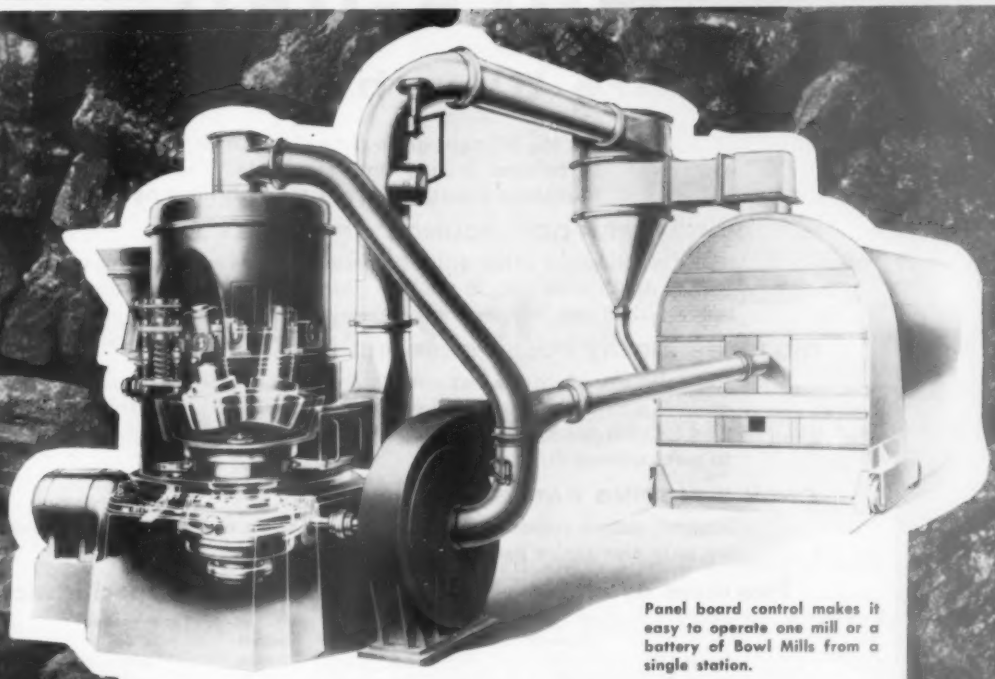

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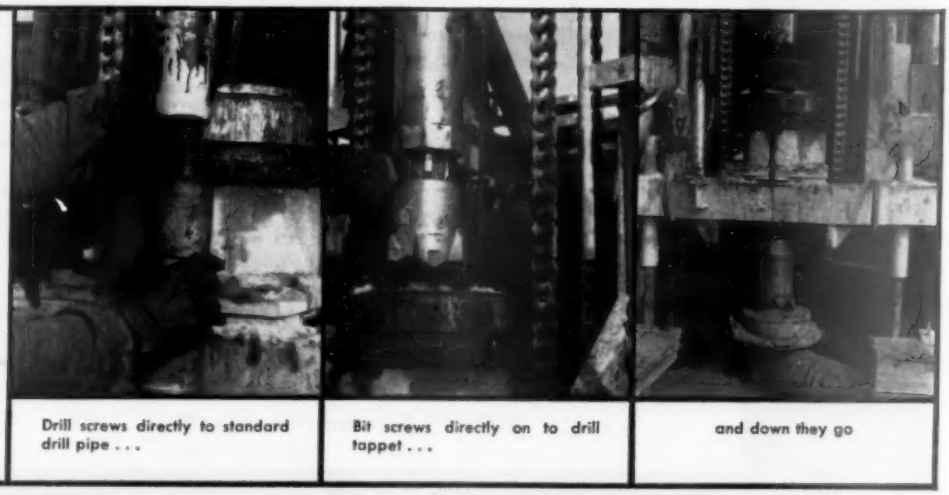

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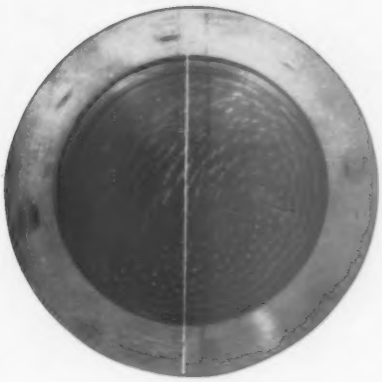

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To test their theory, the authors built an experimental mill and explain their findings here

By GEORGE J. HALBART and VICTOR F. FREYMANN*

In this third section (See Rock Products, June, 1957, page 157 and July, 1957, page 105) we show the practical application to grinding mill practice of our derivation of an arrangement of balls with the greatest interpenetration.

TO ACHIEVE THE FORMATION of pyramid arrangements with stratification planes perpendicular to the lining, a smooth lining can be covered with round bars parallel to the axis of the mill. The diameter of these bars will theoretically be $\sqrt{3}-1$ or .73 times the diameter of the balls and the distance between the axes of two bars would be $\sqrt{2}$ or 1.4 times the diameter of a ball.

The angle of collapse of any ball in relation to the balls on which it rests is about 55 deg. and each ball is supported by two other balls, Fig. 8.

To obtain the tetrahedron arrangement, the distance between bars is $2\sqrt{\frac{2}{3}}$ or 1.63 times the diameter of a ball and the diameter of the bars is equal to the diameter of the balls or else to $\sqrt{3}-1$ or .73 times that diameter; in this case, the bars must be shaped to allow for positioning of balls.

This kind of lining will ensure that maximum drive is communicated to the whole of the mass which will be as compact as possible.

In Fig. 8, the smooth lining (1) is covered with bars (2). The balls of the first layer (3) fit in between these bars and support other layers.

There must be a certain free space between these surfacing bars, into which the balls will fit. The lower part of this space may be filled with material (4) which may be part of the lining (1).

In the square-base pyramid arrangement, this thickness of the material will be equal to half the diameter of the surfacing bar; consequently it would be sufficient to use semicylindrical bars resting on the smooth lining, Fig. 9.

This type of lining profile may also be achieved by using lining sheets or plates with semicircular asperities.

Fig. 10 illustrates an application of this kind; this profile consists of longitudinal slits, and results in a lightweight lining with a maximum saving of wear, which is spread over the whole contact surface of the balls in the charge and of the lining.

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*Mr. Halbart is Managing Director of Les Fonderies Magotteaux Ltd., Vaux-Liège, Belgium; and Mr. Freymann is Head, Technical Studies Dept., of the same firm.

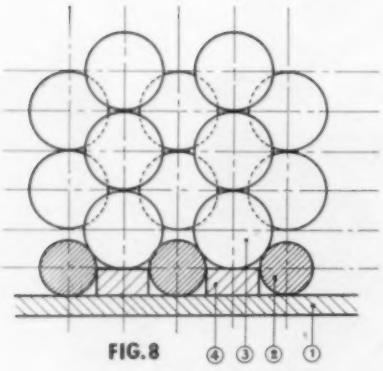

FIG. 8

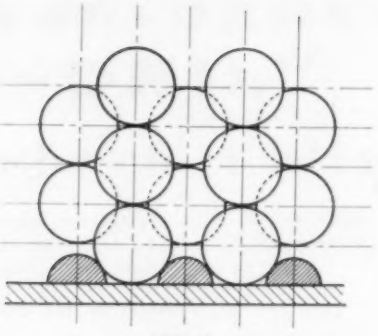

FIG. 9

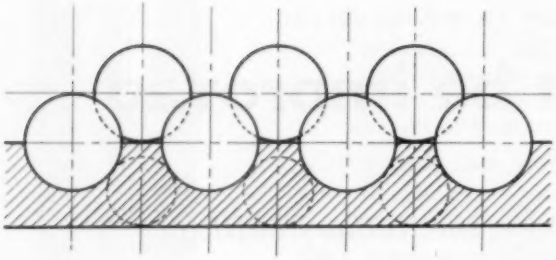

Fig. 10

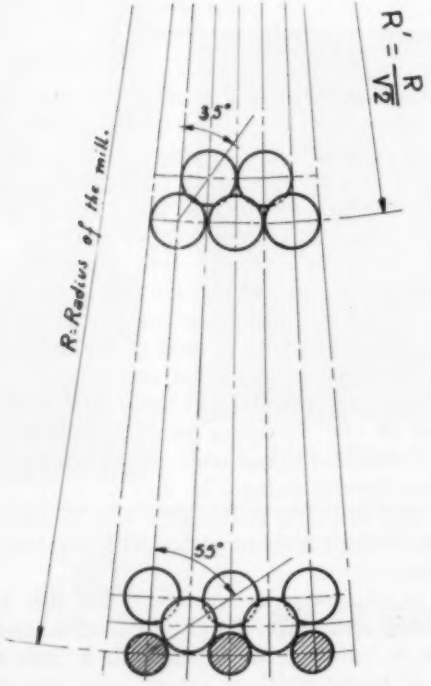

Fig. 11

Ball mill efficiency

continued . . .

There are two other important advantages in the use of a lining of this kind:

When the balls are piled up in layers parallel to the lining (and this occurs with a smooth lining or a lining derived therefrom), the peripheral layer is given maximum compactness for the proposed arrangements. Yet, since the mill is cylindrical, the second layer will not dispose of the same area and either the balls will not interpenetrate correctly those of the first row or they will leave a number of empty spaces. A compact arrangement with properly interpenetrating layers is impossible to achieve in a cylinder if the compact layers are made parallel to the outer surface of the cylinder.

In the arrangements proposed here, the cylindrical layers are less compact but are closer to one another and the interpenetration is therefore greater (see Fig. 11). We will place the more important empty spaces thus created parallel to the axis of the crusher so that the parallel rows of adjoining balls will be able to close up, without interfering with one another. Although the compactness of the arrangements will be slightly lessened due to the curvature of the mill, the interpenetration of the layers will remain unimpaired.

Rows coming closer to one another, the depth of the interpenetration will decrease. The angle of collapse of a pyramid arrangement will gradually decrease from 55 deg. to 35 deg. It will reach this latter value when the radius equals

$$\frac{\text{the inner radius of the mill}}{\sqrt{2}} \quad \text{(Fig. 11)}$$

Thus, for the normal load factors, we have in-

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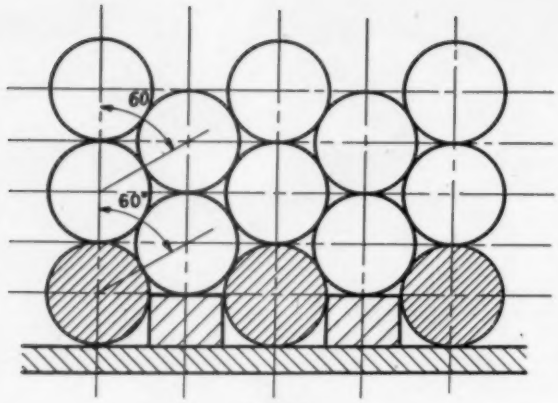


Fig. 12

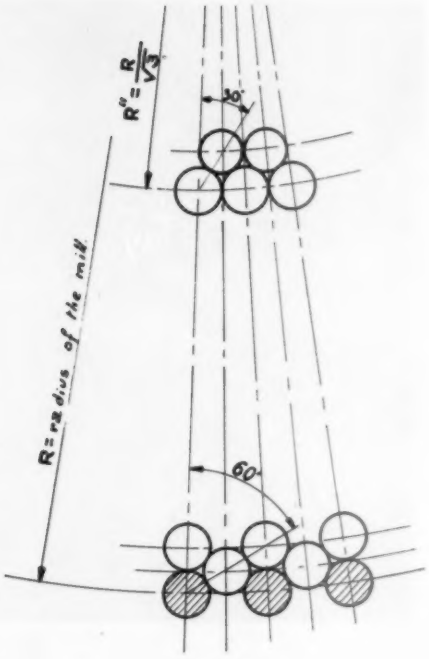
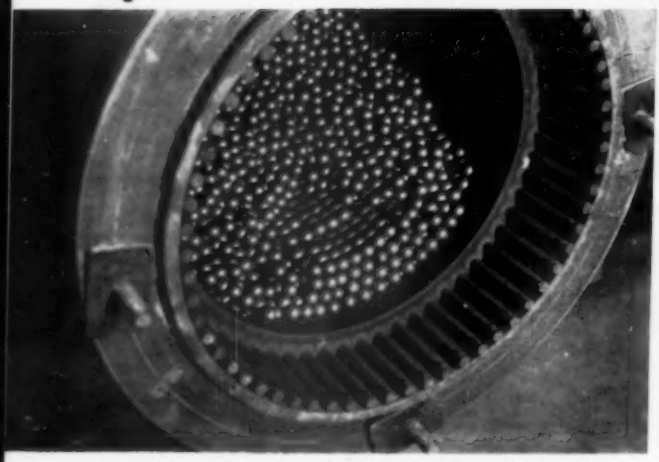


Fig. 13

Fig. 14



A panel is bolted to this end of the experimental ball mill

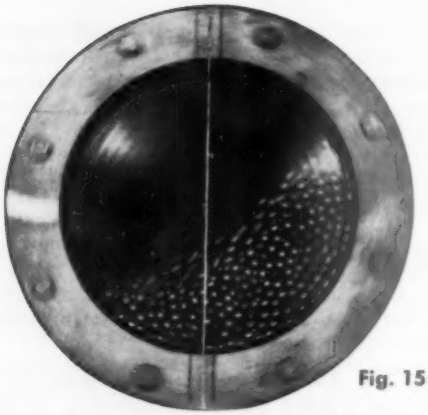


Fig. 15

Smooth lining, speed of rotation: 40 rpm. Loading coefficient: .3, exposure time: 1/50 sec.

Ball mill efficiency

continued from page 152

sured that the mass of grinding bodies is suitably driven.

The proposed arrangement provides gradually increasing adherence towards the periphery, which reaches its peak between the peripheral balls and the lining.

The efficiency of the lining will be greater if all the balls at any given cross-section of the mill are of the same size.

It is desirable to assure a longitudinal classification of the balls. Such a classification improves the output of a mill, provided the larger balls can be made to converge at the feed end of the mill, and the smaller balls at the outlet end. Classification also simplifies the sorting of the charge.

The bar lining helps to ensure classification of the balls. The simplest way to do this is as follows:

a) The surfacing bars or the surfacing grooves instead of being parallel to the axis of the mill are inclined in relation to the plane containing the ax-

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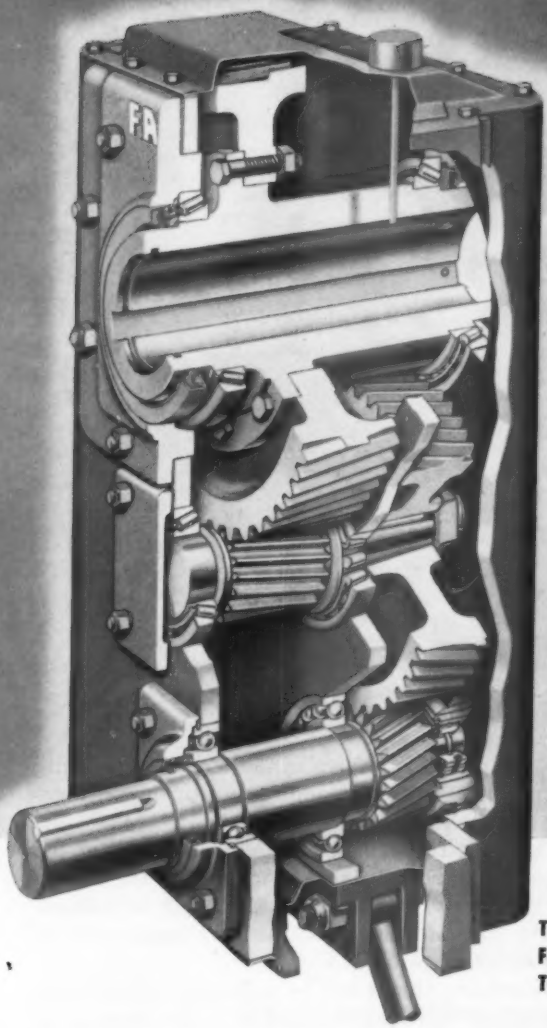

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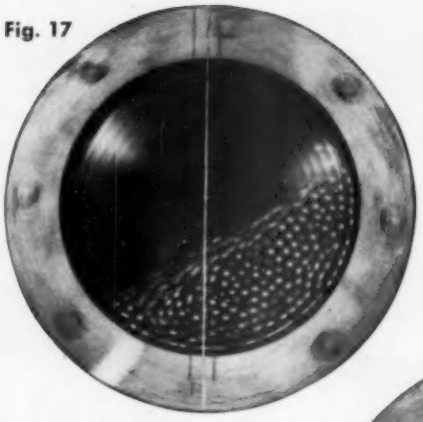
Ball mill efficiency

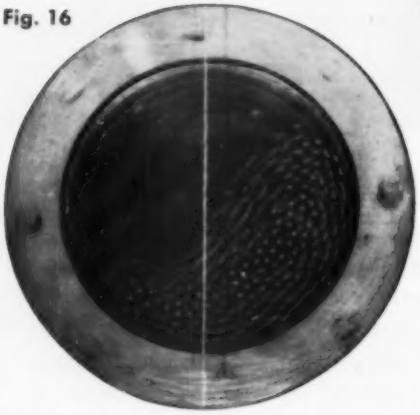
continued from page 154

Fig. 17



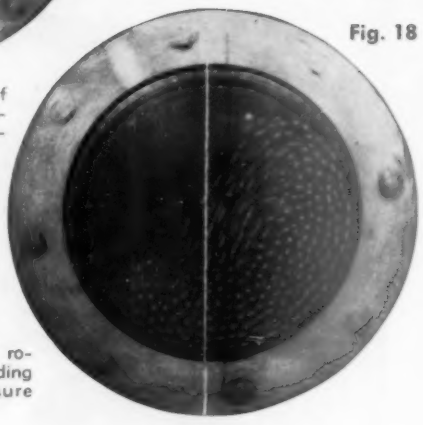
Smooth lining, speed of rotation: 55 rpm. Loading coefficent: .3, exposure time: 1/100 sec.

Fig. 16



Rod lining, speed of rotation: 40 rpm. Loading coefficent: .3, exposure time: 1/50 sec.

Fig. 18



Rod lining, speed of rotation: 55 rpm. Loading coefficent: .3, exposure time: 1/100 sec.

is, so as to form parts of spirals or ellipses. The direction in which they are inclined must be selected so that the balls will move toward the output end of the mill. The smaller the balls, the easier it will be to convey them to the outlet end, since grooves have a firmer grip on the smaller balls.

b) The balls may also be placed in the direction of the generating line of a truncated cone, with the larger basis at the feed end and the smaller at the outlet end. A tube mill would then consist of a number of successive truncated cones, the smaller base of each one joining on to the larger base of the next one, in a number of steps.

If we achieve a classification of the balls according to size, in the direction of the axis, the profile of the lining in each zone will depend on the diameter of the grinding bodies in that zone.

This innovation applies equally well to rod mills. In this case, maximum compactness can be achieved when the center of the section of the bars, in a plane perpendicular to the axis of the mill, is at the apex of equilateral triangles, the sides of which are equal to the diameter of the grinding bars.

One of the sides of the triangle may be parallel or perpendicular to the lining, or in any intermediary position in relation to the side of the mill, without impairing the compactness of the arrangement of the rods.

The most favorable position is where one of the sides of the triangle is perpendicular to the wall of the mill, since in that case, the angle of collapse of the bar, in relation to the bars supporting it, will be 60 deg.

To achieve this it will be sufficient to fix a number of bars to a smooth lining with the diameter of the bars equal to the diameter of the crushing bars. The distance between the axes of these surfacing bars should be $\sqrt{3}$, or 1.73 times their diameter, Fig. 12. The depth between surfacing bars should be equal to half the diameter of the bar. It is sufficient to use half-bars placed on a smooth lining.

The proposed arrangement insures thorough interpenetration of the layer despite the curvature of the lining of the crusher. The angle of collapse will gradually decrease from 60 deg. to 30 deg., reaching this latter value when the radius R" equals $\frac{R}{\sqrt{3}}$, where R is the radius of the mill (see Fig. 13).

Please turn to page 158

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Power, payload, economy and styling features make Dodge 4-way leaders of low-priced 3

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All in all, truck owners would be well advised to check into the '58 *Power Giant* line-up before replacing or adding units. These Dodge trucks are definitely four-way leaders of the low-priced three.

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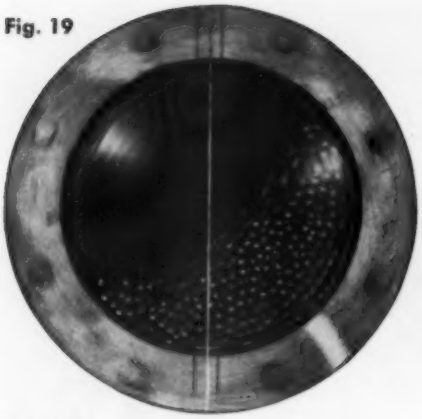
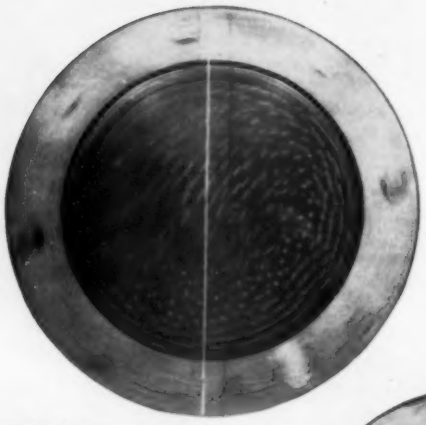
Fig. 19



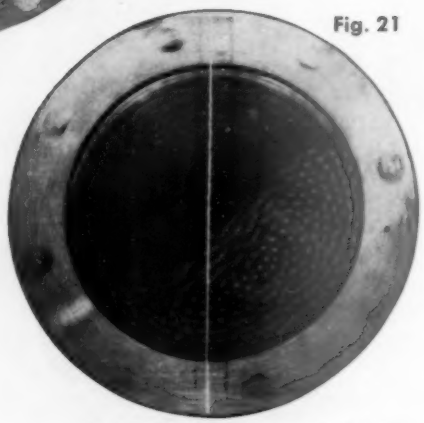
Smooth lining, rotation speed: 73 rpm. Loading coefficient: .3, exposure time: 1/100 sec.

Fig. 20



Rod lining, rotation speed: 73 rpm. Loading coefficient: .3, exposure time: 1/100 sec.

Fig. 21



Rod lining, rotation speed: 30 rpm. Loading coefficient: .3, exposure time: 1/50 sec.

Ball mill efficiency

continued from page 156

To test this theory, we have built an experimental mill that enables us to see the action of the charge of grinding bodjes when the mill is in operation and to make pictures of it.

It consists (see Fig. 14) of a steel cylinder and overhung driving shaft which rotates the cylinder; at the other end of the mill there is a panel of thick glass. The cylinder is driven through a gear system and may be rotated at different speeds. Inside the cylinder provision is made for fitting cylindrical linings, with the lining profile to be tested.

The main characteristics of the mill are:

—inner diameter: 335 mm.
—inner length: 500 mm.
—nature and size of grinding bodies: balls—12 mm. dia.
—critical rotation speed: 73 rpm.
—speed equivalent to $\frac{32}{D}$ —55 rpm.
—range of rotation speeds: from 30 to 80 rpm.

Figures 15 to 20 illustrate the behavior of the charge with a smooth lining and with a rod lining; all other conditions remain identical in both cases.

A full study, at progressively increasing speeds 30, 35 and up to 80 rpm. shows that a smooth lining cannot drive a charge of grinding bodies without considerable sliding and corresponding loss of energy. In the most unfavorable circumstances, the sliding may become an "en bloc" oscillating sliding of the charge. On the other hand, the lining devised in accordance with our principles always drives and raises the charge without any sliding at any speed, whether high or low. For example, see how all the layers of balls are driven by the rod-lining in Fig. 21, taken with an exposure of 1/50 sec., at 30 rpm. and loading coefficient of .3.

A slow motion projection of the film of the movement of the grinding bodies at whose different speeds shows considerable sliding when a smooth lining is used, not only between the charge and the lining, but between one layer of balls and another.

In the light of these experiments we can see that the profile of the lining has a considerable influence on the arrangement and behavior of the charge, on the grinding process itself, on the amount of energy consumed, and consequently on the wear of ball or rod charge and on the lining. The purpose of this paper was to indicate how it is possible to alter one of the elements which play a part in this operation in order to achieve that purpose—the lining.

END

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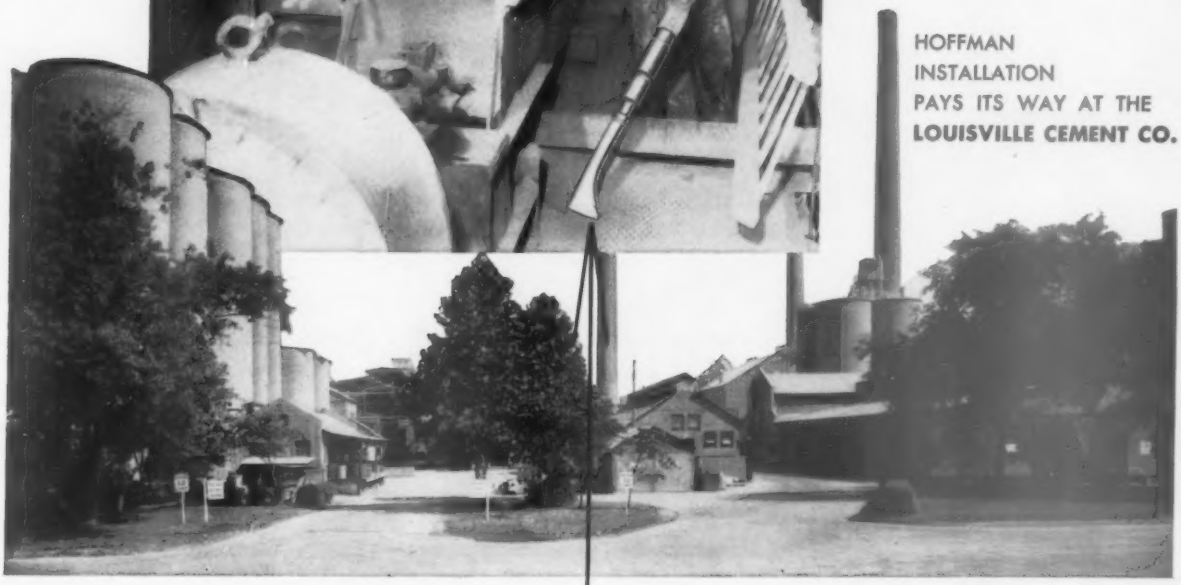

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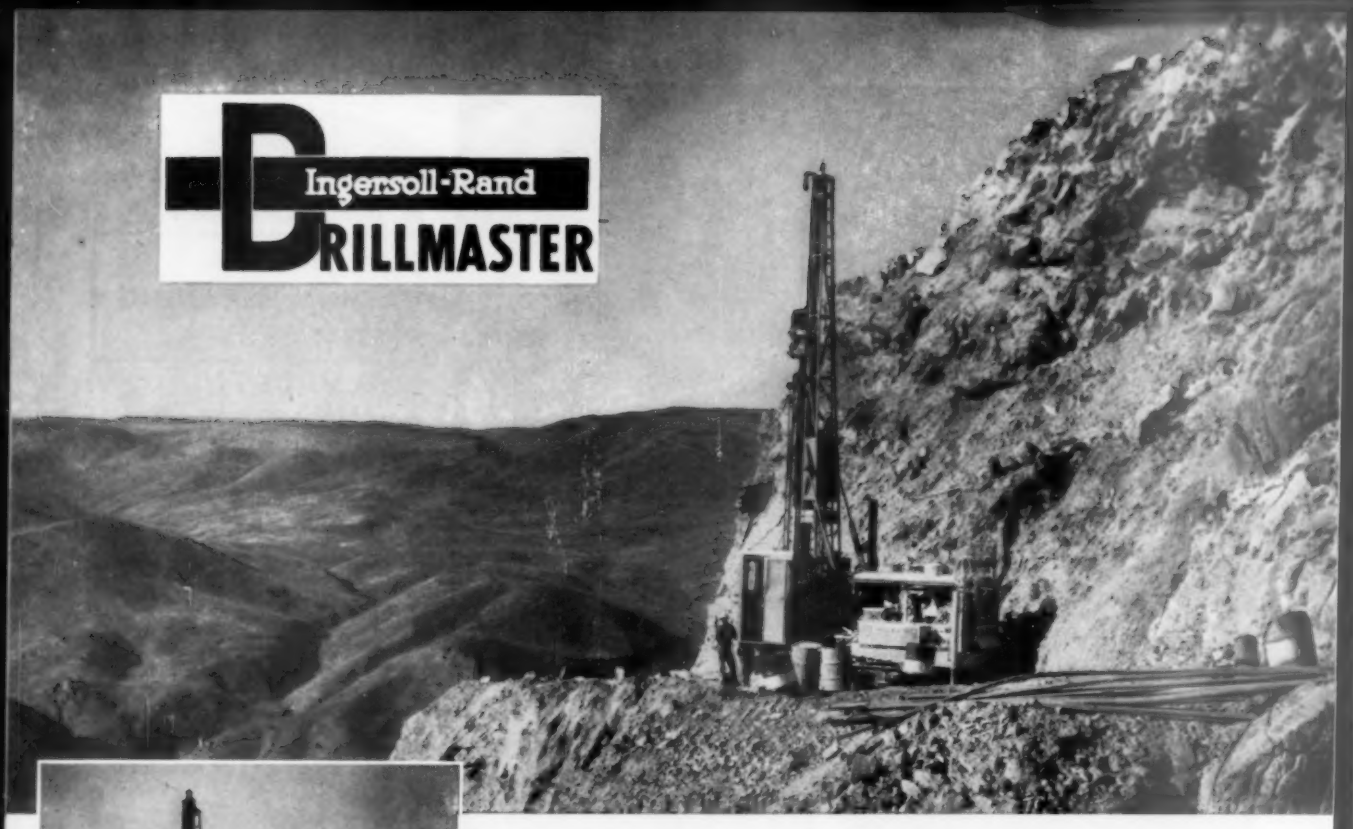

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COUPLINGS—H. W. North Co. has made available Bulletin UD-5801 describing its line of load supporting type flexible couplings. Also discussed is its line of heavy-duty speed reducers designed and developed for driving all kinds of heavy rotating machinery at low and medium speeds. Parallel shaft and right angle type units are being offered in AGMA ratings up to 1,500 hp.

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. . . AND TO PLAN EFFICIENTLY FOR TOMORROW

FREE INFORMATION

You can obtain catalogs and literature listed on these and other pages of the magazine by entering the number appearing either below or beside the item of interest on the READER-SERVICE CARD in this page.

MOTOR STARTERS—Allis-Chalmers Mfg. Co. has released Bulletin 14B8507 describing features of its front access, high-voltage starters (Type H) for 2,300-5,000-v. motors, and Bulletin 14B8615 covering its line of motor starters and contactors in sizes 4, 5 and 6 (Type 425), from 50 to 400 hp.

Enter 715 on Reader Card

ROD DECK SCREEN—Nordberg Mfg. Co. has published Bulletin 265 describing its Symons rod deck screen for use in processing cement, crushed rock, sand and gravel. Outline dimension drawings and rod replacement instructions are provided.

Enter 716 on Reader Card

ROTARY VALVES—The Day Sales Co. has issued Bulletin N-578 describing the various uses of its valves, valve types available, dimensions, specifications and capacities. Actual installations are illustrated.

Enter 717 on Reader Card

SLURRY AGITATOR — Manitowoc Shipbuilding, Inc. has described the various features of its slurry agitator in a recent booklet. A diagrammatic drawing of the agitator, repair parts list, and a chart of slurry density relations is provided.

Enter 718 on Reader Card

SOIL SAMPLERS—Sprague & Henwood Inc. has prepared Bulletin 300 illustrating and describing its soil samplers and accessories. Samplers discussed, include the "spoon," "door" or "window" and sand pump types for recovering sand and gravel samples from soils, and the harpoon type for recovering samples from river bottoms.

Enter 719 on Reader Card

SPEED VARIATORS — General Electric Co. has prepared 16-page Bulletin GEA-6643 describing its line of packaged direct-current adjustable speed drives available from 3 through 150 hp., 220, 440, 550 v., three-phase ac. 60 cycle. Included is a power unit data slide rule for calculating case dimensions, horsepower, speed range, power unit weight and motor frame size.

Enter 720 on Reader Card

STEEL FLOORING—Joseph T. Ryerson, Inc. has brought out Bulletin 50-9 describing five types of steel for floors, stairs, ramps, catwalks, platforms and similar applications. Plate and panel sizes, ordering hints and fastening methods as well as tables of safe loads and other engineering data are given.

Enter 721 on Reader Card

TRANSMISSION BELTING—Extremultus, Inc. has issued a catalog describing its power transmission belting. Information is included on uses, proper belt selection, tensioning and maintenance and bearing load reduction.

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V-BELT DRIVES—Dodge Mfg. Corp. has published 108-page Bulletin A-661 concerning selection and operation of V-belt drives. Standard, variable speed and special drives, Taper-Lock sheaves, sealed-life V-belts and Taper-Lock bushings and hubs are covered. Tables have been expanded to include more pre-engineered drives. Other tables give horsepower capacities, belt speeds, center distances, sheave diameters and other data when special drives are required.

Enter 723 on Reader Card

VIBRATING SCREENS—Dravo Corporation has issued Bulletin 1475 on its line of vibrating screens, feeders and conveyors. Construction features and methods of operation are explained.

Enter 724 on Reader Card

WELDING MANUAL — Hobart Brothers Co. has published 60-page Booklet EW-201, "How to Get Better Welds," containing information on metals and electrodes, proper welding procedures, types of joints, welding positions, welding symbols, causes of common welding troubles and what to do about them. There is a definition of welding terms, an explanation of AWS classification numbers and comparative index of welding electrodes.

Enter 725 on Reader Card

WIRE CLOTH—Twin City Iron & Wire Co. has published 30-page Catalog 56 on its wire and wire cloth. Oblong and square openings, gauging of wire diameters and definitions of clear openings and mesh are discussed. Tables of ordering instructions and a chart approved by NSGA, NCSA and NSA covering wire diameters for screens for sizing of mineral aggregates are included.

Enter 726 on Reader Card

X-RAY INSTRUMENTS — Philips Electronics, Inc. has published two booklets giving engineering data on its X-ray instruments for element analysis and structure determinations. Instruments discussed include cameras, the X-ray diffractometer, the X-ray spectrograph and the Autrometer and automatic indexing X-ray spectrograph.

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JANUARY, 1958
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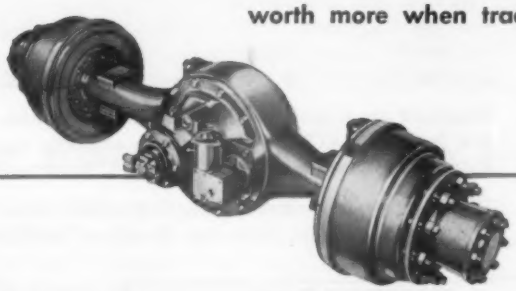
In the Stone Products Industry—

Eaton 2-Speed Axles Keep Trucks on the Job —Cut Operating and Maintenance Costs

Pulling out-of-the-hole in off-the-highway operation, making time on the hills, maneuvering in heavy traffic, highballing on the open road — each calls for a different gear ratio to assure maximum efficiency, economy, and safety. Eaton 2-Speed Axles *double* the number of available gear ratios, permitting the driver to use the one best suited to road, load, and traffic conditions. This use of the *right* gear ratio for every situation permits engines to run in their most efficient and economical speed range, reducing stress and wear on all power-transmitting parts. Not only do Eaton 2-Speed Axle trucks make more and quicker full-load trips, but they do it at lower operating cost and with less maintenance; they stay on the job and out of the shop. Even under the roughest conditions, trucks equipped with Eaton 2-Speeds last thousands of miles longer — and they're worth more when traded in.

More than Two Million Eaton Axles in Trucks Today. For complete information, see your truck dealer.



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AXLE DIVISION
MANUFACTURING COMPANY
CLEVELAND, OHIO

PRODUCTS: Engine Valves • Tappets • Hydraulic Valve Lifters • Valve Seat Inserts • Jet Engine Parts • Hydraulic Pumps Motor Truck Axles • Permanent Mold Gray Iron Castings • Forgings • Heater-Defroster Units • Automotive Air Conditioners Fastening Devices • Cold Drawn Steel • Stampings • Gears • Leaf and Coil Springs • Dynamatic Drives, Brakes, Dynamometers

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Economist predicts

continued from page 93

The trend of wages is up. Even though the increase in wages may not be as great in 1958 as in recent years, the Board visualizes 1958 as another year of higher average weekly wages and salaries. Disposable personal income (after taxes) is expected to exceed $310 billion in 1958. This is a figure up from $300 billion in 1957; $287.2 billion in 1956; $254.5 billion in 1954 and $70.4 billion in 1939.

Total gross national product (all the nation's spending for goods and services) topped $435 billion in the full year 1957, a strong new high. That compares with $414.7 billion in 1956, $361.2 billion in 1954 and $91.1 billion in 1939. For 1958 we estimate a gross national product of more than $450 billion—a new record, not far from half a trillion dollars!

Higher buying power has been spreading out in this country, giving it a broad cross section of stability. About half of all families now get more than $5,000 annually, compared with less than a quarter of our families at the end of World War II. With disposable earnings high, our quick-asset position is close to a record. Individuals in the U. S. own more than $450 billion worth of assets as cash, bank deposits, savings and loan shares, insurance loan value, and government and municipal securities. In addition, they own over $300 billion worth of corporate securities, compared with individual mortgage and consumer debt less than $175 billion.

Corporation assets growing

Similarly, American corporations' assets are growing and are now at a new high. At the beginning of 1958 they are up substantially over the year before. Current assets total $234 billion, including $37 billion cash, and current liabilities $125 billion—leaving $109 billion net working capital with enough spare funds to finance a great deal of new construction.

At the beginning of 1957, by comparison, current assets totaled $225.7 billion, including $34.7 billion cash, and current liabilities $121.3 billion—leaving $104.4 billion net working capital. While it is true that the cost-price squeeze has held down profits expansion for many, this very fact is all the more reason for the purchase of more modern factories and labor-saving, cost-reducing equipment and supplies.

All these figures, estimates and conclusions by the Board of Analysts of Future Sales Ratings in-

Please turn to page 166

"You don't say! Step up production 10%?"

But we do say! Many firms have discovered that Pangborn Dust Control in their plants has effected a definite increase in employee efficiency. By trapping dust at the source, Pangborn Dust Collectors keep air clean, help maintain good working conditions. Individual productivity can go up 5%, 10% or more . . . resulting in higher overall production by healthier, happier employees.

What's more, Pangborn gives you other benefits of lower housekeeping costs, longer machinery life, extra profits from any salvage value and better community relations. And Pangborn Dust Control offers a complete line of collectors for all jobs.

Why not discover how you can profit from Pangborn Dust Control? Write for Bulletin 922 to: PANGBORN CORP., 4300 Pangborn Blvd., Hagerstown, Md. *Manufacturers of Dust Control & Blast Cleaning Equipment.*

Pangborn CONTROLS DUST

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Economist predicts

continued from page 164

dicate expanding business opportunities in 1958 for the rock products and related industries and those organizations selling plant equipment and supplies to these industries. The alert and sales-expansive-minded rock products machinery and equipment people, with new, modern lines of products for 1958, and with strategic and persuasive advertising and promotion, should be able to attain a sales level never before surpassed.

END

Estimated spending for 1958 compared with 1957

(In millions of dollars)	1957	1958
New plant	$ 56.0	$ 59.0
Drilling, crushing and grading equipment	46.5	49.1
Power generating equipment	36.7	39.0
Power loading and excavating equipment	34.4	36.5
Washing and beneficiating equipment	30.6	32.5
Conveying equipment	19.3	20.4
Trucking equipment	17.8	18.8
Miscellaneous supplies, Equipment and expenditures	31.0	32.7
TOTALS	272.3	288.0

1958 Legislation

continued from page 96

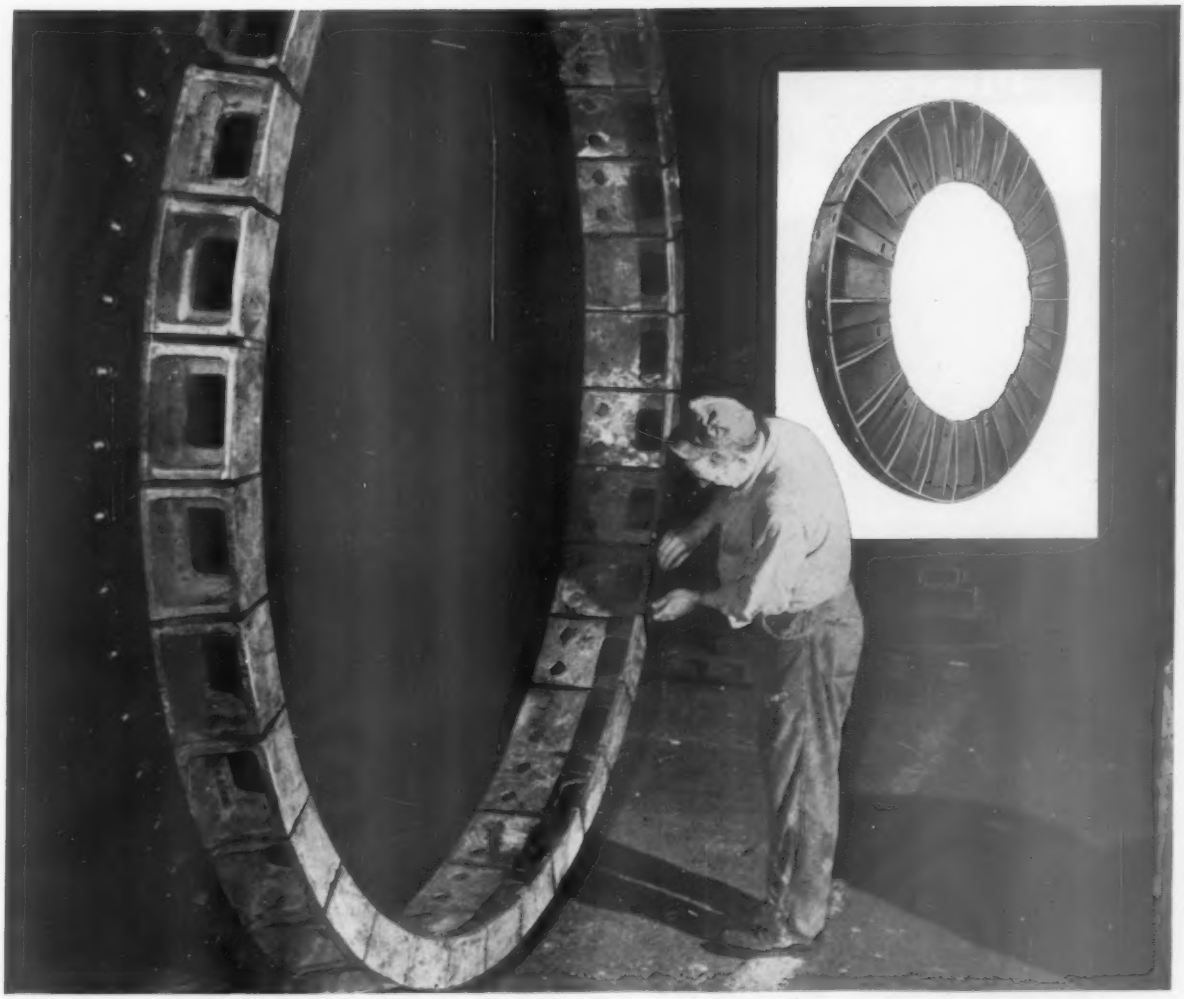
the wage tax base to $6,000 from $4,200, and raise the tax rate for employer and employe by ½ percent, effective January 1, 1958; raise the range of monthly retirement benefits to a minimum of $35 and a maximum of $151.80; place the maximum amount payable to a family on one person's earning at $55 to $305 instead of the current sums of from $50 to $200, and provide hospitalization and surgical care for beneficiaries.

Other pending proposals likewise would liberalize the social security retirement age and the eligibility age for receiving disability benefits.

Up the minimum wage?

The House Labor Standards Subcommittee, headed by Representative James Roosevelt, (D., Calif.), is expected to recommend extending the minimum wage, primarily to some retailers. Opponents maintain that if the minimum wage is extended, the rights of local business to determine

Please turn to page 168



IN CEMENT, LIME, AND DOLOMITE PLANTS...

B&W Nose and Tail-Ring Castings Demonstrate Longer Continuous Service

Longer brick life and longer continuous service are being attained by 275 kilns in 54 plants using B&W Nose and Tail-Ring Castings. In many cases, the life of these castings has exceeded 9 years.

Light and strong B&W Alloy Castings have improved kiln performance in most installations. Made of heat-resisting Grade HH alloy, nose ring castings eliminate belling out of the kiln shell, assuring longer brick life and longer continuous operation of the kiln. By protecting the end of the kiln shell from direct flame, the nose ring castings prevent "feathering-down" of the shell because of oxidation. Their design eliminates cracking and warping, experienced with large size castings.

Small size and light weight make B&W Castings easy and inexpensive to install. The protecting flange on the nose ring castings permits the use of low-alloy steel bolts for fastening.

Spare part inventory may be kept low because the same nose ring castings may be used on kilns varying up to 4 feet in diameter, depending upon size. Write for Bulletin S-17. The Babcock & Wilcox Company, Process Equipment Department, Barberton, Ohio.

S-467

BABCOCK & WILCOX

BOILER DIVISION

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1958 Legislation

continued from page 166

wages would be a further curb from Washington on local affairs. The opponents also contend that ever since this country was founded it has been the right of local business people to determine their own affairs rather than let the Central Government make that determination. Most businesses already pay more than the minimum wage.

Miscellany

The Senate and House Judiciary Committees will consider amending the anti-trust laws. Pending companion measures in both houses would remove "good faith" as a legal defense against price discrimination where effect of discrimination would be to "substantially" lessen competition.

Several bills on depletion allowance are pending. One is of particular interest to sand and gravel producers. A measure by Representative Howard H. Baker, (R., Tenn.), would grant producers of sand and gravel a percentage depletion out of bottoms of navigable rivers.

Other bills affecting the nation will include increased postal rates, multiple farm problems, freeing natural gas producers from federal control, foreign trade, inflation, foreign aid, statehood for Alaska and Hawaii, increased pay for classified Government workers and postal employes, public power, raising the interest rate charged by Rural Electrification Administration (REA) from two percent to four percent, whether or not TVA should be given authority to expand its power program through a mammoth bond issue and numerous other proposals.

END

I THINK WE'VE FOUND THE BOTTLENECK, ED!

Bull's-eye performance means more cement and fewer upsets.

HOW TO CUT FUEL COSTS
of rotary kilns

1. Measure and record *oxygen* and *combustibles* in kiln exit gases. These factors directly affect fuel costs.

2. Reduce oxygen (excess air) until a trace of unburned fuel begins to show up in the exit gases.

3. Provide the burner with a reliable combustion guide—% *oxygen* and % *combustibles* on the same chart. Then a single glance shows the burner that he is holding maximum combustion efficiency.

To increase overall kiln efficiency let a Bailey Engineer help you plan for *bull's-eye* performance . . . or for additional information write for a BAILEY KILN CONTROL FOLDER. C-11

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BAILEY METERS

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Sand, gravel program

continued from page 102

ENGINEERING SESSIONS
Tentative Program

Wednesday Morning Session

National Ready Mixed Concrete Association
Presiding Officer—John W. Roberts

"The Uniformity of Concrete Strength as Affected by Cement," Stanton Walker

Thursday Morning Session

National Ready Mixed Concrete Association
Presiding Officer—William J. Hicklin

Open forum discussion on some plant operating problems (Discussion leaders to be selected) (a) Dust control (b) Cleaning trucks (c) Disposal of solids from waste water (d) Heating aggregates (e) Hand inspected cement

"The Use of Ready Mixed Concrete in Pavement Construction"—(Speaker to be selected)

"A Review of Information on Concrete Admixtures"—Delmar L. Bloem

Thursday Afternoon Session

National Sand and Gravel Association
Presiding Officer—E. K. Davison

"Current Developments in Gravel Beneficiation"—W. L. Price, Dravo Corp., Pittsburgh, Pa.

"A Sand and Gravel Plant Designed for Uniform Grading Control"—Richard Campbell, Harry T. Campbell Sons' Corp., Towson, Md.

"Gravel for Railroad Ballast"—Rockwell Smith, Research Engineer Roadway, American Association of Railroads

"The Field for Sand and Gravel in Bituminous Mixtures"—James C. Johnson, Staff Engineer, Asphalt Institute, College Park, Md.

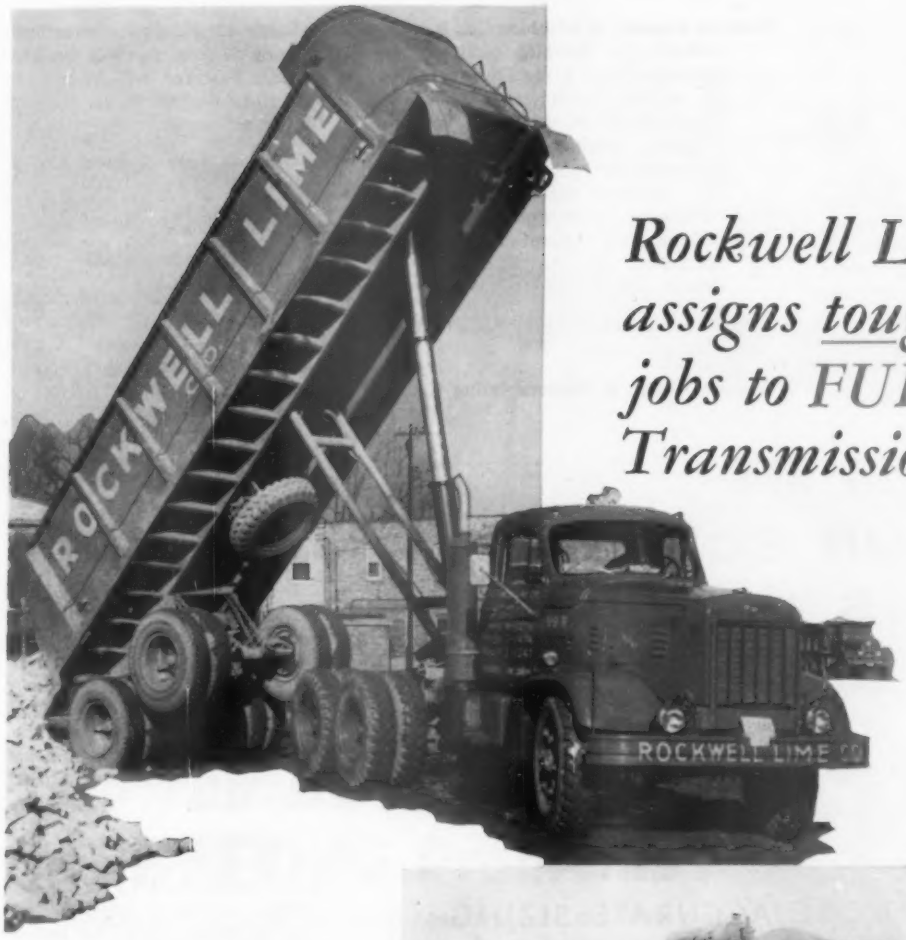
Friday Morning—Joint Session
Presiding Officer—E. J. Nunan

"A Review of Some Specification Problems Affecting Sand and Gravel and Ready Mixed Concrete"—Stanton Walker

"Laboratory Studies in the Evaluation of Aggregates"—Delmar L. Bloem and R. D. Gaynor

"Studies of Flexural Strength of Concrete"—Delmar L. Bloem and Richard D. Gaynor

"The Fire Resistance of Concrete as Affected by Aggregates"—(Speaker to be selected)



Rockwell Lime assigns tough jobs to FULLER Transmissions

A Rockwell Lime Co. FWD 6-wheel-drive transport tractor equipped with 8-speed R-46 Fuller semi-automatic ROADRANGER Transmission.

One of Rockwell Lime's fleet of FWD 6-wheel-drive ready-mix units with 10-speed Fuller 10-CB-65 Transmission.

Rockwell Lime Company, Chicago and Berwyn, Illinois, delivers ready-mix concrete to the pour site through sticky mud or sand—with 10-speed Fuller 10-CB-65 Transmissions in its rapidly expanding fleet of FWD 6-wheel-drive trucks equipped with 501" engines.

For heavy-haul operations, over-the-road and off-highway, Rockwell Lime uses a rugged FWD 6-wheel-drive rear dump tractor equipped with an 8-speed Fuller R-46 ROAD-RANGER® Transmission. This unit is capable of top legal highway speeds, as well as difficult backing and maneuvering through building and off-road areas . . . often several blocks at a time.

In heavy duty construction and transport work, wherever the going is extra rough, Fuller Transmissions put horsepower to work effectively. The closely-spaced ratios permit operators to select exact working speeds required. There's better load control, and engines operate in peak hp range with greater fuel economy.

From more than 110 different models available, there is a Fuller Transmission designed with your job in mind. Check with your local truck dealer for the *right* Fuller Transmission for your job.

FULLER

TRANSMISSIONS

FULLER MANUFACTURING CO. Transmission Division • Kalamazoo, Mich. Unit Drop Forge Div., Milwaukee 1, Wis. • Shuler Axle Co., Louisville, Ky. (Subsidiary) • Sales & Service, All Products, West. Dist. Branch, Oakland 6, Cal. and Southwest. Dist. Office, Tulsa 3, Okla.

Enter 1497 on Reader Card

SHOW PREVIEW

(Continued from page 117)

Southwestern Engineering Co.—Booth 60. Exhibit will show SWECO vibrating screen separators as applied to screening and classification of industrial sands. Applications will be shown photographically, as well as being demonstrated in the booth. Information available on heavy-media separation plants for rock products industry. A. A. Ficery in charge.

Stedman Foundry & Machine Co., Inc.—Booth 33. Working model of Stedman Single Cage Disintegrator, showing the internal impact type principle of reduction. Nonplugging machine will handle high-moisture content material and operates well on material containing deleterious particles, making good separation by pulverization. L. A. Rhodes in charge.

Stephens-Adamson Mfg. Co.—Booth 32.

Symons Clamp & Manufacturing Co.—Booth 22. Concrete forms and forming accessories will be exhibited. Featured will be a new steel stake bar and stake. Harvey Philips in charge.

Taylor-Wharton Iron & Steel Co.—Booth 39.

The Thew Shovel Co.—Booth 46.

Toledo Scale Co.—Booth 24.

The Torrington Co.—Booth 29. Booth will contain various types of anti-friction bearings used in the rock products industry. Featured will be a self-aligning, spherical roller bearing used on screens, crushers, pulverizers, transit mixers, etc. Also on display will be cylindrical roller bearings, tapered roller bearings, ball bearings and roller thrust bearings. G. E. Marvel in charge.

The Transmission & Gear Co.—Booth 65. Transmissions, axles and other power transmitting devices on display. New front-end power take-off mixer drive will be shown in three models. Also to be shown, new two-speed forward and reverse mixer transmission that fits any make of truck. Wm. Christman in charge.

The W. S. Tyler Co.—Booth 34. Featured will be a 4x 10-ft. Type F-300 two-surface TY-ROCK vibrating screen of latest design. Also on display, RO-TAP testing sieve shaker and Tyler screen scale testing sieves, along with selection of Tyler woven wire screens. Wayne W. King in charge.

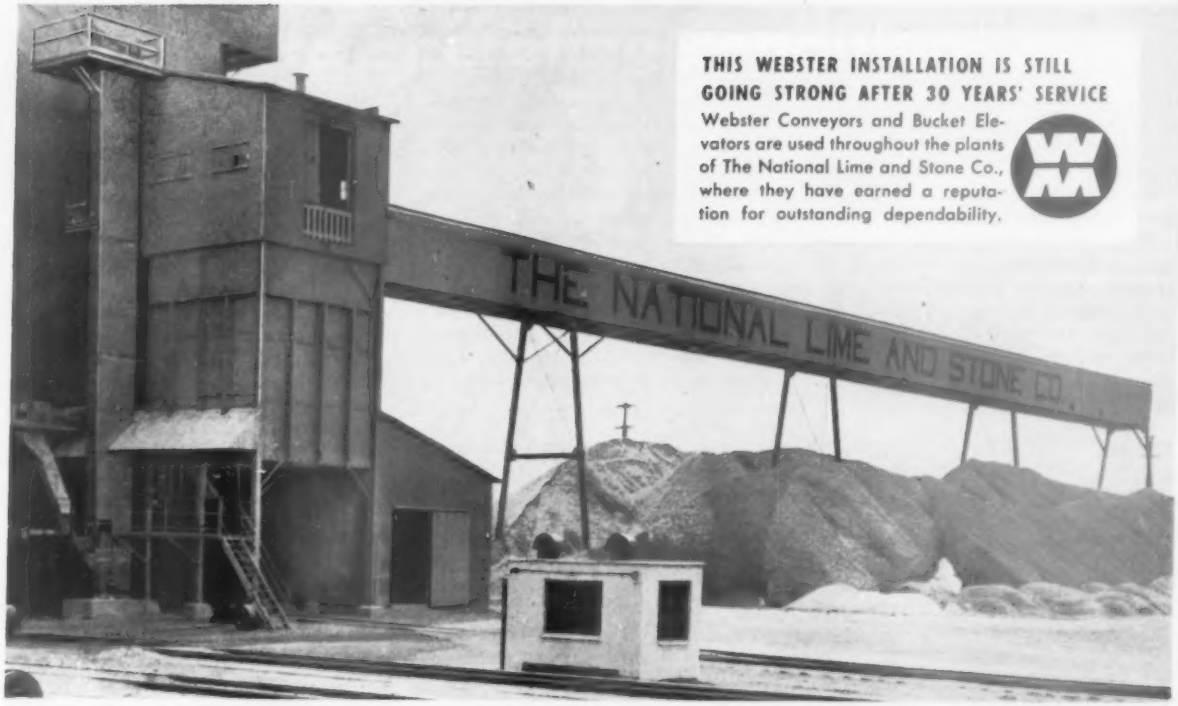
Union Wire Rope Corp.—Booth 53. Will show a complete prestressing bed in miniature form, showing how prestressed concrete is made. Also, full line of "Tuffy" slings and fittings and transparencies of prestressed concrete jobs. Ray G. Noble in charge.

The Universal Engineering Corp.—Booth 73. Working models of Wobbler Feeder, impact breaker, primary crushing plant, plus a swing-wing displayer containing photos and other illustrative material. Ed. Y. Jones in charge.

Werco Steel Co.—Booth 10. Booth will contain 3-ft. and 4½-ft. Tornado impact crushers, a new development in impact crushing, crusher jaws and rolls, pulverizer parts, plus Cross Special Analysis "CSA" perforated steel plate. Donald B. Massey in charge.

Charles E. Wood Co.—Booth 12.

END



THIS WEBSTER INSTALLATION IS STILL GOING STRONG AFTER 30 YEARS' SERVICE

Webster Conveyors and Bucket Elevators are used throughout the plants of The National Lime and Stone Co., where they have earned a reputation for outstanding dependability.

Do You Have CONVEYING *Problems?*

The rough, tough service encountered in rock products plants poses many problems for plenty of producers—until they place those problems in the hands of WEBSTER Engineers.

WEBSTER Bulk Materials Handling Systems will keep your production on the move—efficiently and economically—because they are based upon "know how" gained through 81 years' experience. Webster custom-designs, builds, and installs their systems on a "satisfaction guaranteed" basis. Let us show you how we can solve your problem—no obligation—write today.

Battery of Webster Bucket Elevators handling fine limestone.

Head end of one of the 24" pitch, 42" wide Webster Super Capacity Elevators handling 10x0 stone from primary crusher.

WEBSTER MANUFACTURING, INC.
Dept. R-18, TIFFIN, OHIO

Offices in All Principal Cities

Enter 1407 on Reader Card

ROCKY'S NOTES

(Continued from page 19)

of industry is disappearing. It is getting increasingly difficult, and more expensive, to find new capital funds. Even the giant Standard Oil Co. of New Jersey apparently can no longer depend upon earnings alone for new capital. Certainly it is not going to be easy for the average rock products producer to find new money. He will have to supply the banker or investor with more than a short-range view of the prospects of his enterprise.

An understanding of the national economy is the answer. We don't mean merely the prospective economic activities of the federal government. These could change almost overnight as has recently been demonstrated. We mean changes in the economy of the nation as a whole, of industry as a whole, of the population as a whole. In the construction industry producers are able to see many of these trends locally from ordinary business experience, such for example as the trend of population and home building away from the big cities to the outlying suburbs. This brings a whole string of accompanying developments—the demand for new schools, churches, sewers, water works, pavements, etc. It also is an important factor in the moving of industrial plants away from congested quarters in the cities.

However, there are trends that are not so easily observed, which a producer wanting to invest a million dollars more or less in a new enterprise, if he expects it to prosper for a normal lifetime, must give some consideration to. We don't know any better preparation for such a survey than can be had from a recent book sent to us for review. This is "Economic Geography of Industrial Materials,"* edited by Albert S. Carlson, professor of geography, Dartmouth College. According to the subtitle this book is designed to help select the best location for a new plant, plan economical production, anticipate changes in sources and markets. The subtitle is perhaps a little too comprehensive, but the book is helpful in giving a compact digest of statistics and data of value to a producer in any basic industry. The only rock products industry specifically covered is rock phosphate.

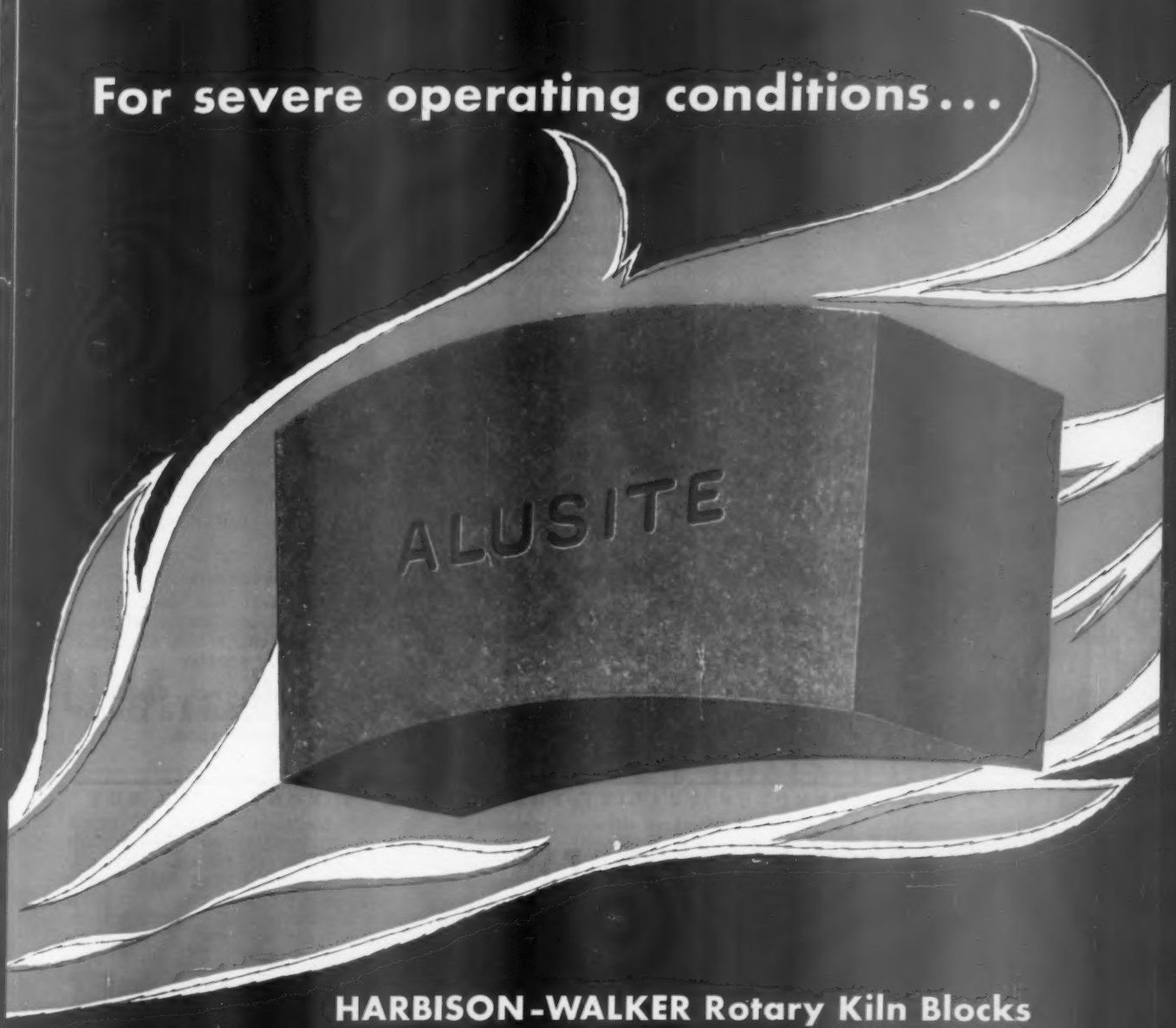
Nevertheless, the factors which govern the selection of plant sites for iron and steel, aluminum, glass, forest products, textiles, etc., are just as important to the producer of cement, lime, gypsum, concrete aggregates, etc. as they are to the promoters of the industry under consideration. For example, one must consider basic facts about concentrations of population, for from these stem the demand for the products of all industry. Here, as an illustration from the Introduction to the volume before us, it is stated: "Approximately 65 percent of all ocean traffic passes through the Atlantic Ocean. About 65 percent of all United States trade with the Orient originates in Atlantic and Gulf ports. The landforms most open to new ideas and low-cost exchange of goods are the lowlands, plains, river valleys accessible to the sea, coasts with natural harbors and productive interior lowlands, hilly country or low, rolling plateaus with river, gulf or marginal seas providing easy access to the sea. These conditions are excellent around the North Atlantic Ocean and very poor around the Pacific. Man has not learned how to live productively in mountains, plateaus or very hilly areas."

That may be rough on California and the other West Coast states but it may also explain why many manufacturers' economists who study such things select our southern tier of states in preference to California for new en-

Reinhold Publishing Corp., 430 Park Ave., New York 22, N.Y., price $12.50 (1956)

(Continued on page 176)

For severe operating conditions...



HARBISON-WALKER Rotary Kiln Blocks

The established leader in the 70% alumina refractory class

The superior physical properties and chemical composition of ALUSITE long ago established its leadership in the 70% Alumina Refractory Class. Outstanding service records made by ALUSITE in rotary kilns are attributable to its low porosity, high strength, volume stability and excellent spalling and flux resistance. Some highly economical applications of ALUSITE are the following:

- CALCINING ZONES OF LIME, LIME-SLUDGE, MAGNESITE AND DOLOMITE KILNS
- TRANSITION ZONES OF BASIC-BRICK-LINED CEMENT, MAGNESITE AND DOLOMITE KILNS
- HIGH TEMPERATURE ZONES OF SOME CEMENT KILNS

Included in Harbison-Walker products are refractories for every rotary kiln plant requirement.

World's most complete refractories service

HARBISON-WALKER REFRACTORIES COMPANY

AND SUBSIDIARIES

General Offices: PITTSBURGH 22, PENNSYLVANIA

ROCKY'S NOTES

(Continued from page 174)

terprises, and why most Pacific Coast industries are much more local in character than those on or near the East Coast. The concentration of industry in the Middle Atlantic states and in the East North Central states (Ohio, Indiana, Michigan, Illinois and Wisconsin) is accounted for by this factor and such others as power and transportation facilities, coal and limestone resources and water for both industrial use and transportation, etc. Most basic industries must be near sources of such raw materials, but petroleum refining, because of cheap transportation by pipeline or tanker, need not necessarily be near the source of raw material.

While limestone resources are not considered in a special chapter, it being stated that deposits can be found in nearly every state, it is quite significant that Pennsylvania and Michigan supply 65 percent of all the limestone used in the steel industry. A single quarry in Michigan supplies about 25 percent of the steel industry's requirements. However, there is another factor equally important to the steel industry — one that is little thought of by the public, but readily appreciated by the concrete aggregates producer — water. It has been estimated, according to the book before us, that the steel industry uses 5 billion gallons of water daily, or some 21 million tons; of this 80 percent is reused but that still means some 4 million tons of new water is required every day.

Such basic industries are the customers, both directly and indirectly through the populations they support, of our rock products industries. Hence there is good reason to believe that investment, say in a cement plant in the Lehigh Valley, is a safe one, and probably always will be, as long as our country remains essentially an industrial nation. In a similar way the economic data as given in this book are essential to any long-range view of markets and prospective markets for rock products.

END

New incorporations

ACME GRAVEL CO., INC., Baton Rouge, La., a sand and gravel firm, was granted a charter with authorized capitalization of $50,000.

VIRGINIA MICA, INC., Lynchburg, Va., has been capitalized at $300,000 by T. M. Thornhill, agent.

LIMA... built to stay on the job- keep output up, costs down

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NEW U.S. PATENTS

OLIVER S. NORTH

Recently issued patents on nonmetallic minerals*

Phosphate Rock

2,811,254 — Flotation process for separating gangue materials from Florida pebble **phosphate rock.** Ore is wet classified to remove low density slimes, and then subjected to negative ion flotation at a pH between seven and nine. Phosphate concentrate is aged for 12 to 48 hours, scrubbed with sulfuric acid to remove the negative ion agent, and subjected to a second flotation with a mixture of amines. (to P. E. McGarry. Assigned to International Minerals & Chemical Corp.)

2,812,858—Process for separating and recovering phosphate values usually lost in tailings from the amine flotation stage during flotation treatment of Florida pebble **phosphate rock.** Tailing slime is re-subjected to flotation using reagents selective to the phosphate, such as a mixture of tall oil and kerosene. (to H. E. Uhland. Assigned to International Minerals & Chemical Corp.)

Sylvinite

2,812,064-5 — These two patents cover a continuous filtering apparatus especially suitable for filtering concentrated chloride solutions encountered during treatment of **sylvinite** ores. (to E. C. Siebenthal and W. P. Wilson. Assigned to United States Borax & Chemical Corp.)

Gilsonite

2,812,161—Granular **gilsonite** is added to oil well muds to seal off porous and broken rock strata through which circulation is being lost. (to E. J. Mayhew.)

Lime

2,812,592—Fluidized bed heat treatment of pulverized solids, such as in the burning of limestone to produce **lime.** Provision is made for utilizing heat from the bed to preheat fresh material being put into aerial suspension. (to N. V. S. Knibbs and E. G. S. Thyer. Assigned to Fawkham Developments Ltd.)

2,812,934—Apparatus for pre-drying slurries of raw materials, for example, such as are used for producing **lime,** before introduction to the calcining kiln. Use of this apparatus increases the capacity of a given kiln and decreases fuel requirements per unit output. (to C. W. Gordon. Assigned to Combustion Engineering, Inc.)

Aggregates

2,810,810—**Perlite** expanding apparatus adapted to produce a filter-type product in the 10 to 250 micron size range. Pulverized, sized crude perlite is dispersed in an air or gas stream and passed through a chamber that is heated by high frequency induction radiation. All operating variables can be readily controlled to produce a product having desired, predetermined properties. (to E. B. White.)

2,811,488—Composition suitable for use in drilling fluid for correcting lost circulation comprises an admixture of fibrous and granular materials. Satisfactory fibers include **asbestos, mineral wool** and a variety of organic materials. Preferred granular materials are Ottawa **silica sand** and expanded **perlite.** (to A. C. Nestle and V. J. Tronolone. Assigned to Texas Co.)

2,811,850 — Preferred composition for making this precast building panel consists of sawdust, crushed **pumice** and portland cement. (to R. L. Clary.)

2,812,622—Simple and efficient apparatus for washing clayey **gravel,** dusty **crushed stone** or the like. Raw material and water under pressure are fed into a drum containing inclined paddles mounted on a revolving frame. Paddles stir and clean the material before lifting it to the discharge opening. Wash water can be recovered and re-used after solids have settled out. Drum can be arranged to feed washed material over a sloping screen directly to a truck bed. Apparatus is low in initial cost and high in capacity. (to H. C. Gorman.)

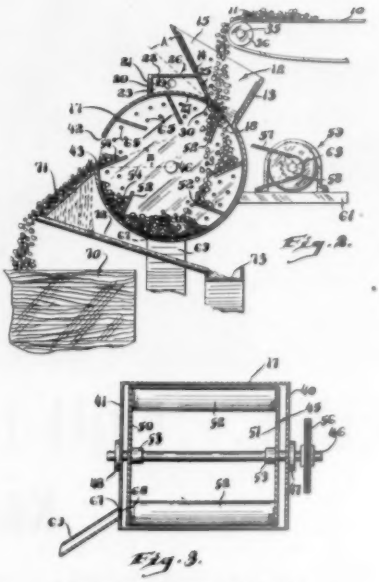

Diagram of Patent 2,812,622

As shown in Fig. 2, material is fed from belt (10) to hopper (12), where it is intercepted by a flow of water through opening (30) from water box (20). Material falls from uppermost paddles to bottom of drum, where it is stirred in water by lowermost paddles and then lifted and discharged through opening (42) to screen (71), where it is de-watered. Excess water is removed from the drum through outlet (69), while drainage from the screen flows off through flume (73).

Figure 2 is an elevation view, partly in section, of the complete apparatus. Fig. 3 is a sectional elevation view of drum (17), paddles (52) mounted on frame (45), waste water outlet (69), sprocket (56) and shaft (46).

Talc

2,809,879—Method for producing sterilized, free-flowing **talc** in the 1-to-200 micron size range by treatment with a lower epoxide. The product is especially suitable for cosmetic uses. (to J. N. Masci. Assigned to Johnson & Johnson.)

(Continued on page 180)

*Copies of United States patents are available at a cost of 25 cents each from The Commissioner of Patents, Washington 25, D.C. For convenience, coupons, each good for one copy of any patent, may be purchased from that official at the rate of $5.00 per 20-coupon pad or $25.00 per 100-coupon pad.

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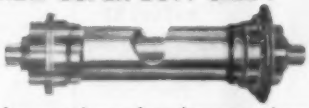

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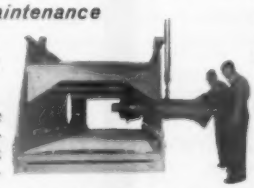

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NEW U. S. PATENTS

(Continued from page 178)

Asbestos

2,811,195 — Process for producing sheets, plates, etc., from inorganic fibers such as **asbestos** or **mineral wool,** plastic or textile fibers or mixtures of fibers. (to H. Kloss. Assigned to Sued-West-Chemie, G. m. b. H.)

2,811,457—Composition used in manufacture of ceramic-bonded, handleable heat insulation shapes comprises zircon, silica aerogel and well opened fine staple amosite **asbestos** fiber. (to S. Speil and I. Barnett. Assigned to Johns-Manville Corp.)

2,811,467—Precoat composition for application to walls of chambers exposed to rocket combustion gases comprises sodium silicate, stannic oxide, sodium hydroxide and an inorganic filler such as **asbestos, pumice** or **kaolin.** Coating is caused to flux into a strong protective layer by using a fuel containing ethyl silicate. (to E. H. Hull and A. F. Winslow.)

2,811,750—Production of a friction material from short and long grades of **asbestos** fiber. (to H. J. Cofek. Assigned to Raybestos-Manhattan, Inc.)

2,813,084—Mixture of palm oil, polychloroprene elastomer, **graphite, asbestos** fiber and ¾ in. lengths of lead wire is extruded and vulcanized to produce a high-quality flexible molded composition packing. (to G. P. Leistensnider. Assigned to Johns-Manville Corp.)

Diatomite

2,811,473—Method for increasing surface resistivity of silicon steel. A composition consisting of mono-ammonium phosphate, di-ammonium phosphate and **diatomite** is applied to the stock, and the stock then heated moderately to react the phosphates with the iron of the stock. Subsequently, high temperature heating in an oxidizing atmosphere produces a cured coating that is stable at high temperatures. (to W. S. Allen and O. E. Romig. Assigned to United States Steel Corp.)

Gypsum

2,810,690—Readily wettable backfill for use in the protection of underground pipe lines, steel structures, etc., consists of a major portion of **gypsum,** a minor portion of **bentonite** and not more than 10 percent of a molecularly proportioned mixture of a hydrated alkaline earth oxide, preferably **lime,** and an alkali metal carbonate, for example soda ash. (to N. O. Campise and C. W. Scamman. Assigned to Houston Oil Field Material Co., Inc.)

2,812,570—Improved sheet material for and method of molding hollow articles of accurate configuration. A contoured web of wire is coated with a plastic composition consisting of nitrocellulose in ethyl acetate, **gypsum** plaster, castor oil, wood flour, pulverized cork and a filler such as **asbestos** fiber, ground **pumice,** glass wool or the like. (to H. H. Petersilie and E. O. Zimmermann. Assigned to Franz R. Lushas.)

Kyanite

2,811,760—Method for producing refractory molds from a mixture of a gelling medium and a refractory filler, such as **kyanite** or **sillimanite.** Mixture is allowed to gel, then separated from pattern and heated. (to C. Shaw. Assigned to Shaw Process Development Corp.)

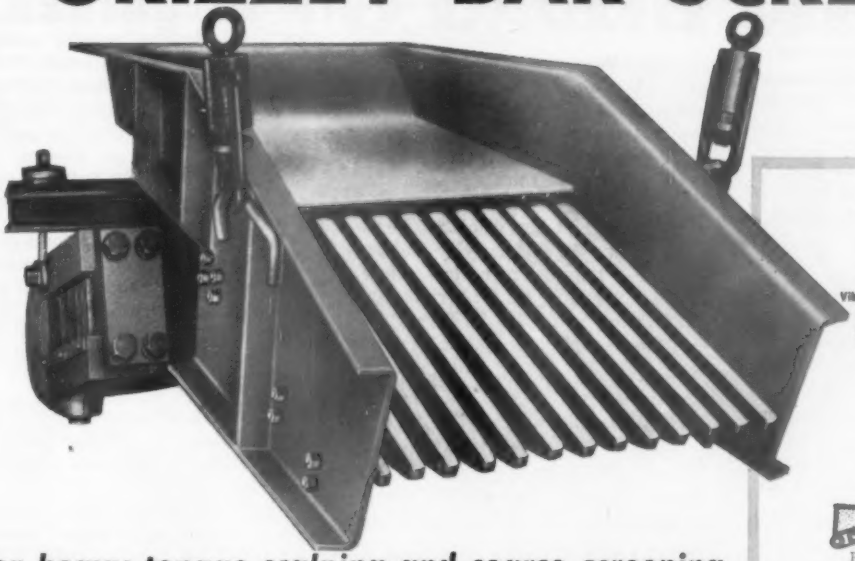
Borax

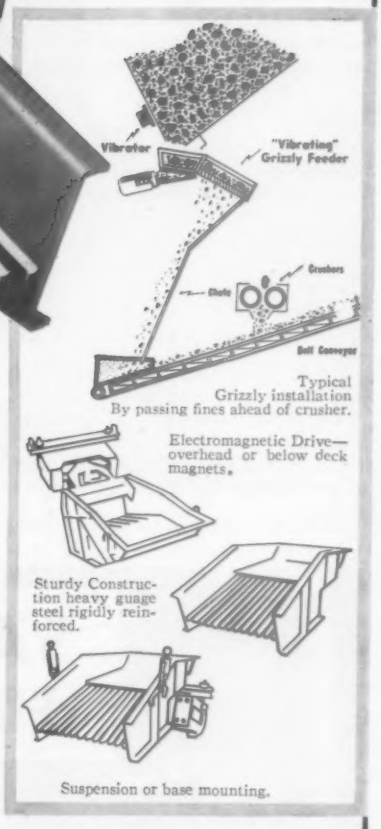
2,805,915—**Borax** is used with arsenic in a corrosion-inhibiting compound. (to G. H. Rohrback. Assigned to Crest Research Laboratories, Inc.)

(Continued on page 182)

SYNTRON "Vibrating"

GRIZZLY BAR SCREENS





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NEW U. S. PATENTS

(Continued from page 180)

Mica

2,810,425—Method of making an electrical insulating sheet consisting of **mica** flakes and a cellular silica skeleton. The silica is conveyed into the mica pores as a silicone resin or ethyl silicate-solvent mixture, and the sheet then is heated to burn out all material except inorganics and leave a silica-mica skeleton. (to M. D. Heyman.)

Sulfur

2,804,293—Apparatus for completing and operating **sulfur** wells wherein the well casing is maintained free of the wall of the well bore as the ore is mined. Thus, the casing is not crushed and destroyed by shifting formations due to subsidence or other structural movement. (to M. H. Parks. Assigned to Esso Research & Engineering Co.)

2,806,770 — Improved apparatus and method for solvent extraction of sulfur from **sulfur** ores in very pure form and at moderate cost. (to R. P. Hutchins and G. C. Zwayer. Assigned to The French Oil Machinery Co.)

2,808,247—Method for underground solution mining of **sulfur.** The ore body is maintained at constant pressure and volume to prevent subsidence of overlying formations. The porous, barren cap rock is filled with a liquid under pressure. (to M. H. Parks. Assigned to Humble Oil & Refining Co.)

2,808,248—Method for underground solution mining of **sulfur,** using two wells sunk to different depths. Hot gas under pressure is introduced into the shallower well. Gas and water are produced from the deeper well, and melted sulfur is pumped from the shallower well. Hot gas displaces formation water and successively depletes ore bed from higher to lower level. (to C. L. Prokop, G. G. Wrightsman, W. A. Hoyer and M. S. Taggart, Jr. Assigned to Humble Oil & Refining Co.)

Miscellaneous

2,808,427—**Lime** is used in this process for preparing derivatives of terephthalamic acids. (to B. W. Hotten. Assigned to California Research Corp.)

2,809,093—Solution method for recovering potash values from **langbeinite** ores in the form of potassium sulfate without the use of potassium chloride. The co-product, a concentrated magnesium sulfate solution, can be evaporated and used as plant food or processed for other magnesium or sulfate products. (to W. B. Dancy. Assigned to International Minerals & Chemical Corp.)

2,809,179—Method of manufacturing a free-flowing material consisting of rubber and ground **barite.** Product is used in road building, production of roofing paints, papers, shingles or siding, for undercoating auto and truck bodies, etc. (to H. A. Endres, J. W. Shaw, Jr., and H. B. Pullar. Assigned to The Goodyear Tire & Rubber Co.)

2,809,617—Use of natural or synthetic **graphite** to remove combustion chamber deposits and minimize octane requirement increase. (to J. D. Bartleson, A. R. Klingel, Jr., and S. M. Darling. Assigned to The Standard Oil Co.)

2,809,898—Composition for a permanent, porous ceramic mold used for producing porcelain insulators, pottery, or the like comprises 25 to 27 percent Tennessee-Kentucky **ball clay,** 10 to 28 percent Georgia **kaolin,** and 45 to 65 percent calcined alumina. Product has the required moisture absorption capacity and high tensile strength. (to L. E. Thiess. Assigned to General Electric Co.)

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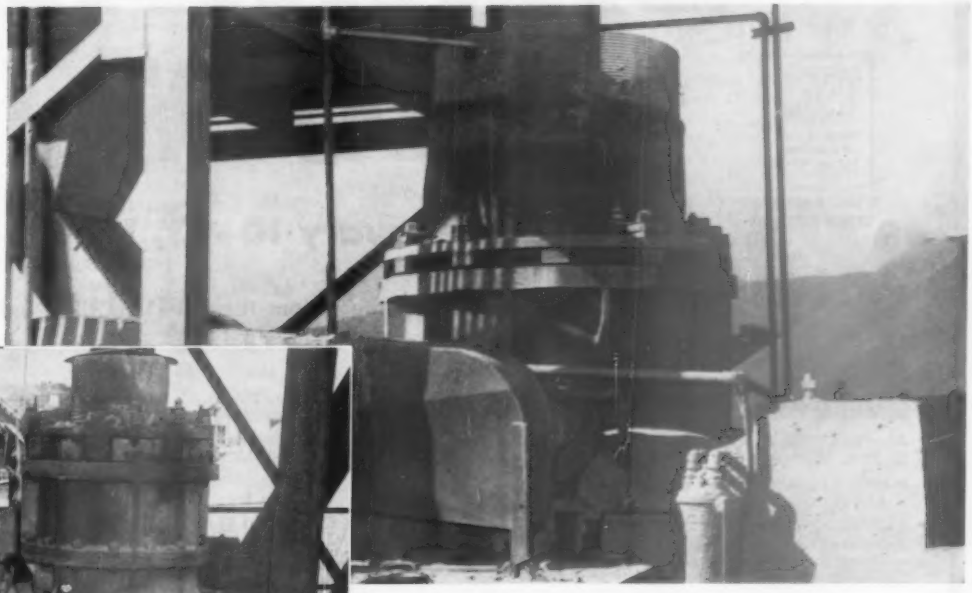
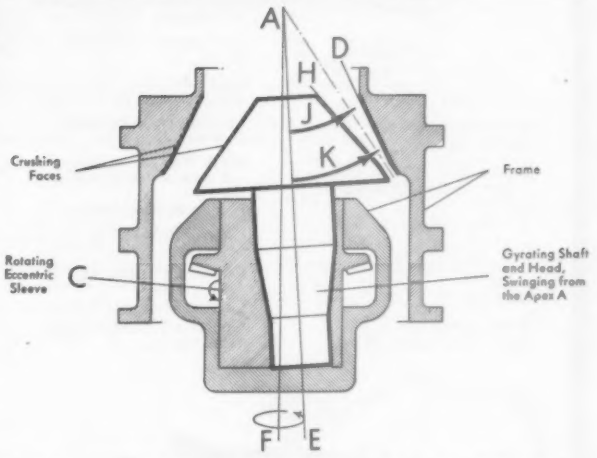
36" Kue-Ken reducing 1½" feed at Santiago Aggregates, Inc., Orange, California.

18" Kue-Ken gyratory reducing 1½" feed to ⅝" or ¾" product at Union Sand and Gravel Co., Spokane, Washington.



The new gravel processing plants of Santiago Aggregates, Inc., Orange, California and Union Sand and Gravel Co., Spokane, Washington producing up to 175 tph of finished product use Kue-Ken gyratories exclusively for their secondary crushing. Kue-Ken takes choke feed. It fits ideally into flow sheets where head room is limited and makes economical gyratory crushing practical in most any operation. Kue-Ken liners wear longer under continuing, hard materials crushing. The crusher is designed on the exclusive Kue-Ken "crushing without rubbing" principle that eliminates the main cause of liner wear. Though exceedingly strong, Kue-Ken is sufficiently compact and light to be used in either a permanent or portable installation.



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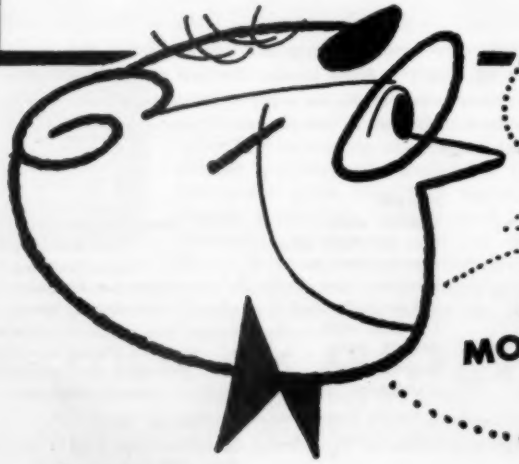

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Syntron Company
Homer City, Pa.

Taylor-Wharton Iron &
Steel Co.
High Bridge, N. J.

The Thew Shovel Co.
Lorain, Ohio

Toledo Scale Co.
Toledo, Ohio

The Torrington Co.
South Bend, Ind.

Tractomotive Corp.
Deerfield, Ill.

The Transmission & Gear Co.
Dearborn, Mich.

The Travel Batcher Co.
Salt Lake City, Utah

The W. S. Tyler Co.
Cleveland, Ohio

Union Wire Rope Corp.
Kansas City, Mo.

The Universal Engineering
Corp.
Cedar Rapids, Iowa

Werco Steel Co.
Chicago, Ill.

Western Machinery Co.
San Francisco, Calif.

Westinghouse Transit
Mixer Div.
LeTourneau-Westinghouse
Co.
Indianapolis, Ind.

The White Motor Co.
Cleveland, Ohio

Whiteman Manufacturing Co.
Pacoima, Calif.

Willard Concrete Machinery
Co., Ltd.
Lynwood, Calif.

Charles E. Wood Co.
Milwaukee, Wis.

Gar Wood Industries, Inc.
Wayne, Mich.

Worthington Corp.
Plainfield Div.
Plainfield, N. J.

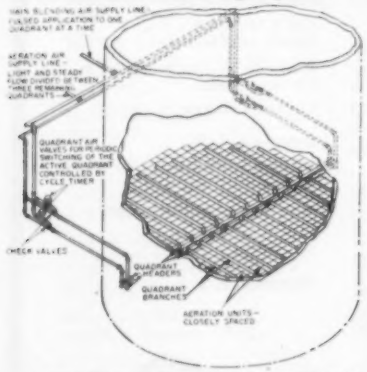
NEW MACHINERY

Portable conveyor is driven by hydraulic system

A TUBULAR FRAME PORTABLE CONVEYOR has been designed with a hydraulic transmission system to drive the belt as well as to raise or lower the unit to desired elevation. The conveyor is designed for heavy duty applications, and is available in 18, 24 and 30-in. belt widths. Lengths range from 30 to 60 ft. in 5 ft. increments. Equipment includes pneumatic-tired swivel wheels, standard loading hopper, head pulley lagging, belt wiper and tow hitch. A vibrating screen, mounted on the head section, can be furnished. *E. F. Marsh Engineering Co., 4400 W. Clayton Ave., St. Louis 10, Mo.*

Enter 312 on Reader Card

Material blending system is based on aeration



A CONCEPT IN BLENDING of dry bulk pulverized materials which reduces deviations in unblended components down to plus or minus .2 percent has been announced. Known as "Fuller Airmerge Quadrant Blending," it is basically an aeration system and can be used on any materials which can be fluidized by compressed air.

The method makes use of a round silo with flat bottom covered with aeration units which are closely placed to give uniform distribution of air. Compressed air is applied in pulsations to one-quarter section of the silo at a time, where material expands, rises and flows outward. Aeration is periodically switched (each 5 to 15 min., depending on material) from quadrant to quadrant in rotation. Two circuits generally result in complete blending.

The system is suited for use in either batch or continuous schemes of operation. For a continuous process, two or more silos are used so that one can be feeding the process while a batch is being accumulated and blended in the other. *Fuller Co., Catasauqua, Pa.*

Enter 310 on Reader Card

Heat resistant rubber

RESEARCH SCIENTISTS of United States Rubber Co. have developed an improved type of butyl rubber called HTB.

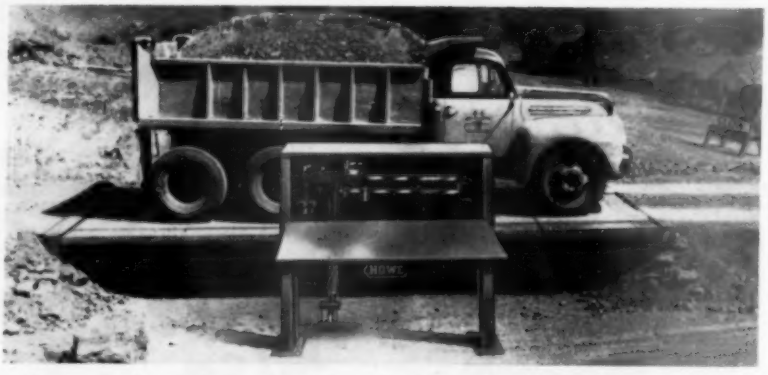
The new butyl will withstand a sustained temperature of 400 deg. F. and a peak load of more than 700 deg. F. for short periods of time, rubber company scientists said. This compares with a maximum sustained heat resistance of 250 deg. F. for natural rubber, 275 deg. F. for GR-S synthetic rubber and 300 deg. F. for standard butyl rubber, scientists pointed out.

U.S. Rubber is not selling the butyl rubber compound, but is utilizing it in the production of conveyor belts, hose and a variety of industrial molded products. It is also evaluating it as a possible tire rubber and for automotive uses.

Its heat resistance makes it applicable in manufacture of conveyor belts for carrying hot materials, and the Passaic, N.J., plant of the company's mechanical goods division has produced more than 50 of them for test installations. *United States Rubber Co., 1230 Avenue of the Americas, New York 20, N.Y.*

Enter 311 on Reader Card

Portable vehicle scale requires no pit



SCALES REQUIRING NO PIT can be relocated as the job requires. These portable vehicle scales are made in capacities to 70 tons and lengths to 60 ft. Additional scale sections can be joined for greater length and capacity. Incorporating parallel link load suspension assembly in their platform construction, the scales are designed to absorb loading shocks and reduce wear on the scale pivots. Weight indications available are standard beam, recording beam, dial weightograph, remote dial, and other methods including Mechanoprint and other weight-recording devices. *Howe Scale Co., Rutland, Vt.*

Enter 313 on Reader Card

(Continued on page 188)

This Link-Belt SS chain has carried over one million tons annually for 16 years

LINK-BELT SS-1146 BUSHED CHAIN on elevator at Whitehall Cement Mfg. Co. measures 20⅞ in. wide. This original chain has been in use since 1941 and, considering the rugged conditions, has needed amazingly few replacements of pins, bushings or links.

Installed on elevators handling cement clinker 24 hours a day

The remarkable performance of Link-Belt SS-1146 bushed chain at Whitehall Cement Mfg. Co., Cementon, Pa., testifies to its exceptional strength and wear resistance . . . emphasizes the economy of choosing the right chain for a specific job. Since 1941, each of three elevators has handled approximately 17 million tons of highly abrasive cement clinker.

Repeated success

This outstanding record of continuous chain service under the toughest conditions is by no means a rare case. Numerous installations report similar results achieved with this long-life wear-resistant chain.

Link-Belt SS-1146 bushed chain offers large joint bearing surfaces for greater wear resistance and trouble-free service in heavy-duty conveying and elevating. Sidebars of selected steel are accurately formed and machined for tight press fit of pins and bushings. The latter are made from tough, hardened steel and locked against rotation in sidebars.

For abrasive jobs

These straight steel sidebars with hardened steel pins and bushings provide needed strength to resist heavy continuous loads. Smooth, hardened surfaces resist abrasive action of gritty materials, prevent packing in critical joints.

18 million tons, 26 years later... SS-856 chain still serviceable

Sets record in cement mill elevator service

The more than quarter-century of continuous handling of raw materials at a Pennsylvania cement mill illustrates the long-wearing durability of Link-Belt SS-856 elevator chain. This amazing service record under extremely tough conditions proves that it pays to pick the right chain from Link-Belt's complete line.

Link-Belt SS-856 chain is made of high carbon steel sidebars with nickel alloy pins and bushings. Hardened sidebars give additional strength plus greater resistance to wear and pitch hole distortion. In addition, accurately machined pitch holes assure proper pitch and tight press fit of mating parts —extend chain life. The hard, smooth surfaces of steel joints repel gritty materials . . . resist abrasion.

Link-Belt elevator chains are available with ultimate strengths up to 200,000 lbs.

Link-Belt SS-102½ bushed chain extends life of stone elevator

Several years ago an eastern stone quarry installed a main bucket elevator to handle 200 tons per hour of minus 2¼-in. mixed stone. Service life of the original two-strand elevator chain was found inadequate. After several shutdowns, it was replaced with Link-Belt SS-102½ chain with K-5 attachments at every third link.

This long-life, wear-resistant chain is now in its fourth year of uninterrupted operation. It has carried over 475,000 tons as compared to 60,000 tons which was normal life for the previous chain.

Recent inspection of the SS-102½ chain reveals that it is good for another long stretch of service. Elimination of shutdowns and replacements more than justified the slight difference in cost between this and the original chain.

STONE ELEVATOR has buckets at every third link. Centers are 65 feet, with elevator inclined 75 degrees from the grade. Chain speed is 280 feet per minute.

HEADQUARTERS for chains, sprockets and other Link-Belt products is your nearby Link-Belt factory branch store or authorized stock-carrying distributor. Refer to the yellow pages of your local telephone directory.

LINK-BELT

CHAINS AND SPROCKETS

LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office, New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville, N.S.W.; South Africa, Springs. Representatives Throughout the World. 14,735

SEE OUR EXHIBIT—SAND & GRAVEL, READY-MIX CONCRETE SHOW, CHICAGO—FEBRUARY 10-13

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NEW MACHINERY

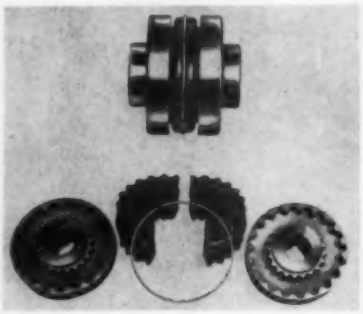
(Continued from page 186)

Materials handling

DAWES SILICA MINING CO., INC., Thomasville, Ga., has eliminated double handling of materials through installation of an S-A Swivelpiler. Rather than handle tonnage by a locomotive crane with a rehandling bucket once and sometimes twice to get the desired piling location, the company has installed the Swivelpiler which handles 140 tph. of raw material. An 18 in. wide conveyor belt carries material up to the discharge end, 35 ft. from the ground, and the material is then thrown distances up to 50 ft. in any direction. Two grades of washed, graded silica sand are separated and piled on opposite sides of the conveyor. *Stephens-Adamson Manufacturing Co., Ridgeway Ave., Aurora, Ill.*

Enter 318 on Reader Card

Flexible coupling



FOR USE WHEREVER MECHANICAL POWER is to be transmitted, the new "Sure-Flex" flexible coupling has only three basic parts: two hub flanges and a two-piece rubber sleeve. The internal and external teeth of the flexible sleeve mate with the flange hub teeth and lock tight under torque load without clamps or screws. The elastic rubber sleeve with two planes of engagement absorbs both angular and parallel misalignment. There are no rubbing or wearing surfaces and no need for lubrication.

All shock vibrations are absorbed and prevented from being transmitted by the coupling sleeve. This high torsional flexibility of approximately 15 deg. at peak torque provides smooth power transmission.

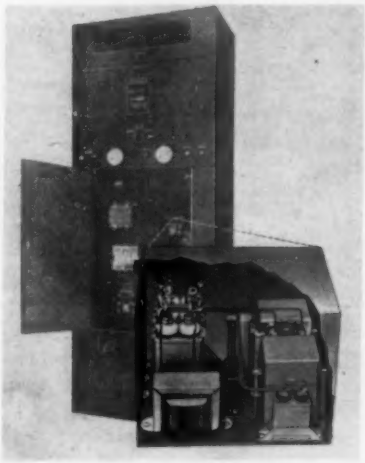
The couplings are designed to tolerate internal abuse or high resisting forces, angular misalignment of up to one deg., parallel misalignment of from 1/32 to 1/16 in., depending on shaft size, and free end-float up to ⅛ in., depending on size.

Final assembly of the coupling can be made without tools of any kind. Shaft alignment is checked from the precision-machined flanges. Halves of the split rubber sleeve slip axially into place. A retaining ring may be added to hold the split sleeve for high-speed operation.

Sure-Flex couplings are now supplied in six sizes for motors from 3 to 80 hp. Shaft bores are available from ⅝ to 2¼ in. *T. B. Wood's Sons Co., Chambersburg, Pa.*

Enter 319 on Reader Card

Automatic precipitator control



THE RECENTLY INTRODUCED "transistomatic" precipitator control brings automation to the regulation of Cottrell precipitator units. These units recover dust by passing it through an electrostatic field. The dust particles become electrically charged and are attracted to metal plates placed in the gas stream and thus are "precipitated" out of the gas.

Since the efficiency of the process is dependent upon placing the maximum-possible voltage on the gas stream short of "flashover," it is essential that this voltage be continuously adjusted to the fluctuating characteristics of the gas stream.

The new Transistomatic control requires no maintenance, no parts replacement and uses only "all-static" components. It is completely sealed in electronic potting compound so that it is unaffected by moisture, dust, humidity or other similar environmental factors.

Transistorized circuitry is only one of several innovations incorporated into the Transistomatic unit. It embodies a new type of "sensing" principle that integrates total surge current in relation to time. This is designed to assure continuous pinpoint accuracy in controlling the precipitator voltage. *Western Precipitation Corporation, 1000 West Ninth St., Los Angeles 54, Calif.*

Enter 320 on Reader Card

Transmission belt

BELT STRETCH, A COSTLY PROBLEM where transmission belts are used on drives, is reduced to a minimum in a new belt. The photograph shows a belt which shows no stretch or slip after two years of service.

Uniform length in the belt, designed for use on all type drives, is maintained by controlling moisture in the air during manufacture. The manufacturer goes a step further to maintain proper elongation by packaging the belt in a hermetically-sealed polyethylene bag to prevent moisture from entering the cords during delivery and storage.

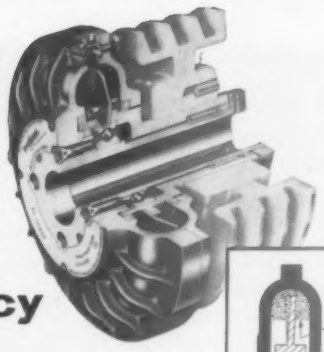
The new belt is named "Unicord" because the tension member consists of one ply of super strength synthetic cord which has the strength of five plies of other cord.

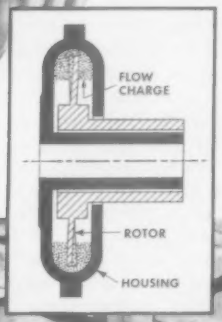
A loop built belt, the Unicord has folded edge construction formed by a black 2-ply straight-laid wear-resisting envelope cover. Pulleys as small as 4 in. are recommended. This belt is available from 4 to 6 in. in width and 100 in. to 45 ft. in length. *B. F. Goodrich Co., Akron, Ohio.*

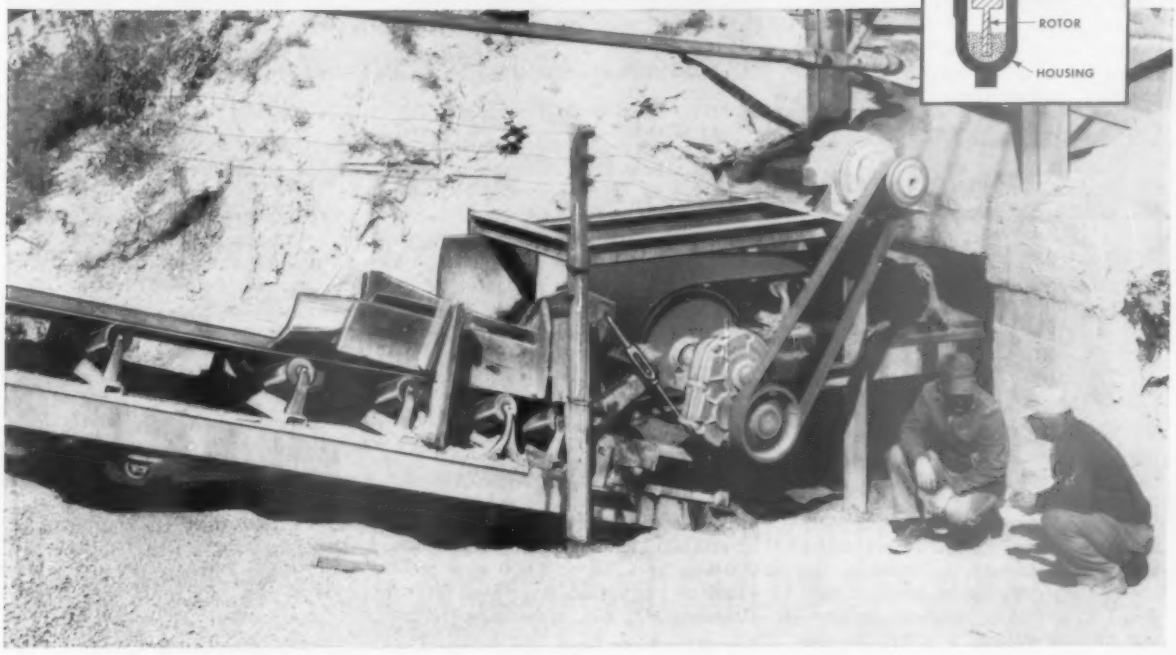
Enter 321 on Reader Card

(Continued on page 190)

This new drive starts loads smoothly... with smaller motors ...and gives 100% efficiency at full load!







FLEXIDYNE

THE DRY FLUID DRIVE

This tunnel conveyor, 225 feet long, handles 500 tons of sand and gravel per hour—8 to 16 hours a day.

With Flexidyne, the motor picks up the load easily and smoothly. Power investment is reduced, power costs cut, maintenance simplified and conveyor belts are protected against breakage.

Flexidyne, the Dry Fluid Drive, is the *new* development that starts loads smoothly, that protects against shocks and overloads, that saves power and that gives 100% efficiency at full load!

The "dry fluid" in Flexidyne is heat treated steel shot. A measured amount, called the flow charge, is contained in the housing, which is keyed to the motor shaft. When the motor is started, centrifugal force throws the flow charge to the perimeter of the housing, wedging it between the housing and the rotor which transmits power to the load.

After a momentary slip between housing and rotor, the two become locked together and achieve full load speed without slip and at 100% efficiency during the running cycle. Changes in weather—hot or cold—inside or out—do not affect operation of Flexidyne.

Flexidyne is now available in 8 sizes—for use with electric motors and internal combustion engines from 1 hp to 300 hp. While each size is power rated, the flow charge can be varied at will to give tailor-made torque for your particular job. Write for Bulletin A-640.

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Enter 1425 on Reader Card

(Continued from page 188)

Grease additive

A SYNTHETIC GELLING AGENT for industrial lubricants makes possible the formulation of multipurpose and specialized grease lubricants. Oronite GA-10 was developed to meet the demand for grease lubricants that would stand up under the extreme temperature, high loads and high speeds of modern machinery.

For example, in cement plant operations the medium grade GA-10 grease can serve several different applications. GA-10 grease can be applied from centralized dispensing systems and hand guns. It can be used in draft fan bearings, crusher house journal bearings, ball mill thrust bearings, conveyor drive bearings, and electric motor bearings. *Oronite Chemical Co., 200 Bush St., San Francisco, Calif.*

Enter 322 on Reader Card

Motor starters

A LINE OF 2,300 TO 4,160-V. starters (Type H) for full or reduced voltage starting, reversing or non-reversing, dynamic braking or multi-speed control of squirrel-cage, synchronous or wound rotor motors has been announced. Completely front accessible, the new starter is compact, with the basic unit measuring 34 x 32 in.

All components were separately tested to prove individual ratings and mechanical strength. In addition, the completed starter was successfully subjected to a 19-kv., 60-cycle dielectric test for one minute, a 60-kv. impulse test, and short circuit tests of 150,000 kva. at 2,300 v. and 250,000 kva. at 4,600 v.

The starter is available with either air break or oil immersed contractors up to 1,500 hp. at 2,300 v. or 3,000 hp. at 4,600 v. Short circuit protection of 150,000 kva. at 2,300 v. and 250,000 kva. at 4,160 or 4,600 v. is provided by current limiting fuses. *Allis-Chalmers Mfg. Co., Milwaukee 1, Wis.*

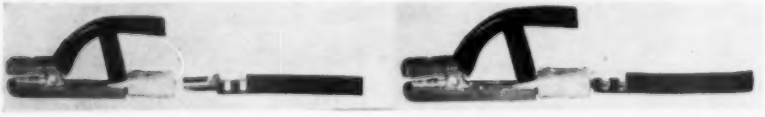
Enter 323 on Reader Card

Transit crane-excavator made for variety of jobs

VERSATILITY AND MOBILITY HAVE BEEN BUILT into the 11-B transit crane-excavator now being introduced. It is convertible from a 10-ton lifting crane to a dragline, clamshell, hoe or shovel and is mounted on a six-wheel drive carrier which provides up to 47 mph. speeds. Emphasis is on ease of maintenance; for example, hoist shafts, horizontal transmission shaft, horizontal swing shaft and swing circle are unit or bench assemblies, each designed to permit quick service or easy replacement as a unit. *Bucyrus-Erie Co., S. Milwaukee, Wis.*

Enter 325 on Reader Card

Cable connection support stops strand breakage



WELDING CABLE STRAND BREAKAGE AT THE ELECTRODE HOLDER CONNECTION has been eliminated by a cable connection support. This formed steel clamp anchors in the electrode holder connection socket and extends back to encircle and grip the rubber jacket of the cable behind the bare strands. The bridging effect of the support, from the holder body to the jacket of the cable, stops the flexing of the bare strands behind the holder connection and stops strand breakage at this point.

Tweco connection supports are made of steel and are zinc plated. They will not rust or corrode when placed with other metals. They work equally well on either aluminum or copper cable and are available in two types: No. 10-P prong type which fits all Tweco Holders and No. 20-B pressure bar type which fits all other holders that use two Allen screws and a pressure bar.

The left photo shows support installed on cable and ready for insertion into holder socket; right photo shows cable after connection has been made. *Tweco Products, Inc., P. O. Box 666, Wichita 1, Kan.*

Enter 324 on Reader Card

Car unloader

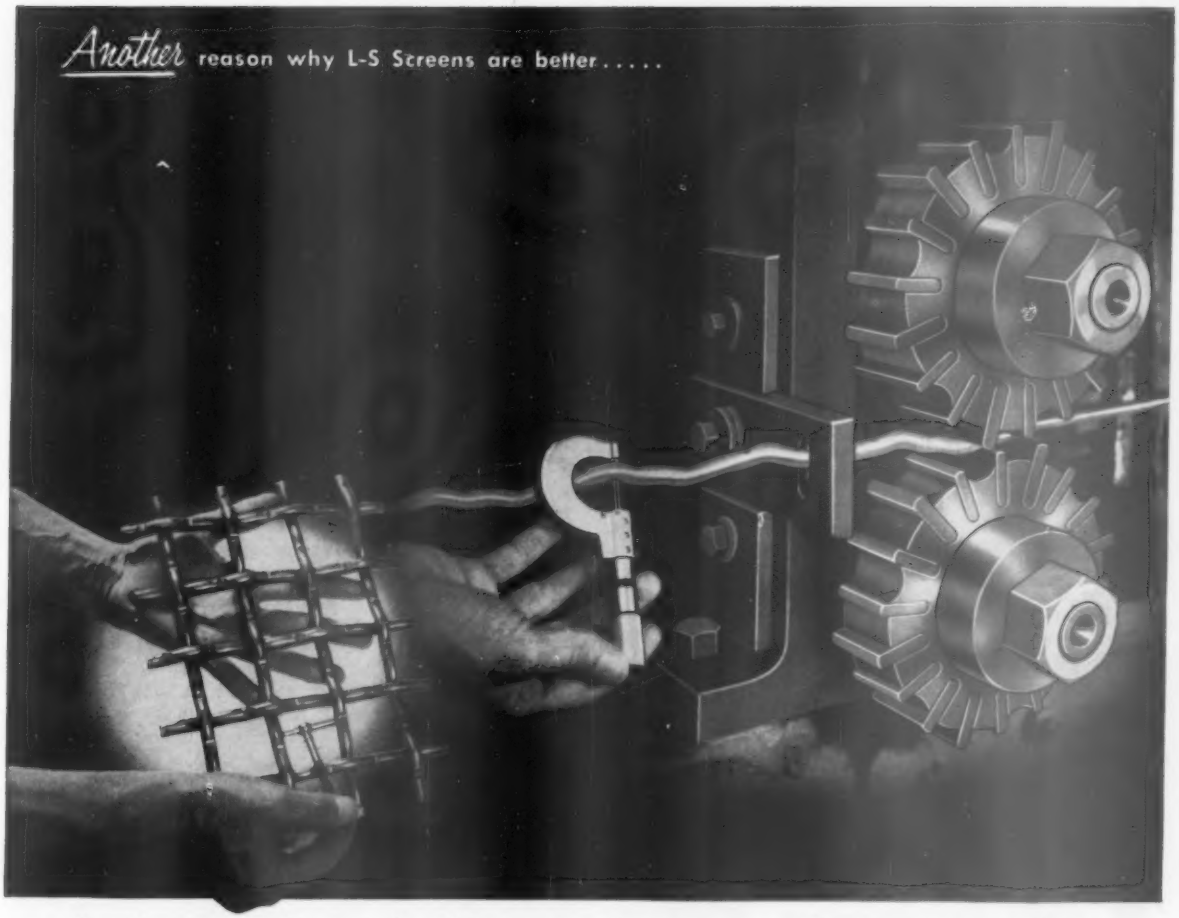
HIGH PRODUCTION CAPACITIES are featured in the Fairfield Model 109 car unloader. The combination belt and chain provide non-slip operation at capacities up to 185 tph. The model handles a wide variety of bulk material and is especially well suited for gravel, stone and sand.

The belt is 24 in. wide, 4-ply, 28 oz., with 1¾ x ½-in. steel channel belt cleats. Chain covers with rubber sealing strips are provided for the full length of the unit. Over-the-road portability is provided by two 6.50 x 16 x 6-ply tires with two roller bearings per wheel. A tow hitch is provided as standard equipment. Total overall length is 20 ft. 10½ in. and overall width is 33¾ in.

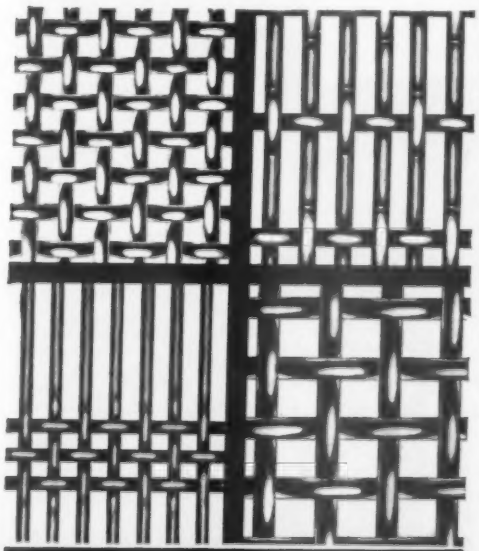
The unloader can be powered with either a 5-hp. electric motor or an 11-hp. gasoline engine. It can be used as an over-the-rail type unloader, or in a standard pit. *The Fairfield Engineering Co., Marion, Ohio.*

Enter 326 on Reader Card

(Continued on page 192)



1 of every 3 production employees perform inspection operations to insure perfection of LUDLOW-SAYLOR Screens



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No customer of ours ever worries about the quality and accuracy of the screens we ship him! With every third man in our factories—plus every department head—charged with inspection responsibility, we make sure our product is right before shipment.

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Enter 1546 on Reader Card

NEW MACHINERY

(Continued from page 190)

Aluminum truck body

A NEW CONCEPT IN MANUFACTURING produced a dump truck body, built by Aluminum Body Corp. New sectional construction of Reynolds aluminum gives the body inside dimensions of 90 in., and 96 in. outside. The gain of from 4 to 6 in. in width permits more payload, with an overall payload gain of 1,800 lb. from the aluminum construction.

The new design uses 12-in. wide aluminum extrusions with stiffener channel integral. Because of interlocking construction, the body, which has an integral floor, can be designed to meet special size requirements of the hauler. It can be packaged and shipped knocked down, permitting assembly by one man. *Aluminum Body Corp., Los Angeles, Calif.*

Enter 327 on Reader Card

Wear resisting alloy

DESIGNED FOR APPLICATIONS requiring abrasion resistance is a highly alloyed foundry product called ZeVeScal. Recommended for parts subject to severe wear, such as agitators, mixers, paddles, screw feeders, etc., it is composed of hard, complex carbides embedded in a matrix of unstable austenite. The illustration shows three chrome-ferrous castings — pugmill blade, sand impeller and conveyor roll—in the series where service life has been increased. *Calumet Steel Castings Corp., 1636 Summer St., Hammond, Ind.*

Enter 328 on Reader Card

Sample analyzer

AN IMPROVED MODEL of the Spectranal analyzer of metallic elements and compounds simplifies use of this laboratory instrument. A new excitation chamber with an indexing assembly eliminates the need to align the excitation electrodes.

Macro and micro samples of alloys, ores, minerals, inorganic and metallo-organic chemicals, soils, water, etc., can be analyzed.

Viewed through the eyepiece, the spectrum appears beneath an illuminated scale, the lines standing out brilliantly against black. Scale covers entire visual range from 4,000 to 7,500 A. Elements are then identified from a chart. *Fisher Scientific Co., 406 Fisher Building, Pittsburgh 19, Pa.*

Enter 329 on Reader Card

(Continued on page 194)

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P. O. BOX 361 **GLOUCESTER, MASSACHUSETTS**

Enter 1555 on Reader Card

NEW MACHINERY

(Continued from page 192)

Low-bed trailer

INTRODUCTION OF A 12-TON capacity low-bed trailer, the DFS-12, has been announced. The new single-axle "economy model" semi makes use of two main beams and full-length outer channels as load-carrying members, to provide maximum strength with minimum weight.

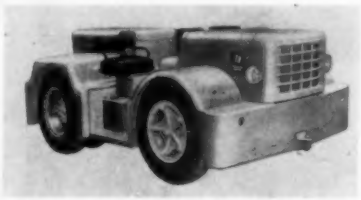
Engineered for use behind standard fifth-wheel tractors, the trailer has an 8 x 14-ft. oak deck platform with 41-in. gooseneck and 2-ft. beavertail, and comes equipped with four 825 x 15-14 ply tires, ICC lights, lash rings, and 12¼ x 6-in. air or vacuum brakes.

The trailer has an 18,000 lb., 6 x 6-in. H-beam cambered axle designed for a gross load of 17,800 lb., with a gross load of 10,650 lb. on the kingpin. *LaCrosse Trailer Corp., LaCrosse, Wis.*

Enter 330 on Reader Card

Towing tractor

ANNOUNCEMENT HAS BEEN MADE of the availability of a new Paymover tractor. This unit, Model T-150, develops 15,000 lb. of drawbar effort and features power steering, four-wheel-power brakes, power-shifted transmission, dual rear tires, plane-



tary-type final drives and a choice of gasoline or LPG power. It has travel speeds up to 22 mph.

Head and tail lights are standard equipment on the T-150. A wide variety of accessory equipment and attachments are also available including sweepers and winches. *The Frank G. two-way radio units, cabs, snow plows, Hough Co., 705 Seventh Ave., Libertyville, Ill.*

Enter 331 on Reader Card

Volt-ammeter

ELECTRICAL MAINTENANCE MEN can spot electrical problems before they cause trouble with a volt-ammeter now being produced. The compact instrument, Model AC-1, measures up to 600 ac. amp. and up to 600 ac. volts.

Ampere loads are checked by clamping jaws around either bare conductors, insulated cable or bus bars.

Suited for balancing electrical loads, minimizing electrical hazards, aiding in the efficient use of electrical circuits in plants, offices, outdoor installations, the AC-1 comes in a sturdy carrying case. *Columbia Electric Manufacturing Co., 4519 Hamilton Ave., Cleveland 14, Ohio.*

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END

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EXPORT REPRESENTATIVES

THE ARMCO INTERNATIONAL CORPORATION, MIDDLETOWN, OHIO

Enter 1547 on Reader Card

MANUFACTURERS NEWS

J. Duncan named president

J. RUSSELL DUNCAN has been elected president and chief executive officer of Minneapolis-Moline Co., according to an announcement by E. S. Reddig, chairman of the board. Mr. Duncan, formerly vice president of Consolidated Foundries and Mfg. Corp., was also elected to the board of directors. He succeeds Henry S. Reddig, who resigned as president and director to devote his full time to personal manufacturing interests.

Elected to Hall of Fame

WESTINGHOUSE AIR BRAKE CO. announces that a bust and tablet for George Westinghouse recently was unveiled at the New York University Hall of Fame. Among the participants in the occasion were the Honorable Herbert Hoover and Dr. William F. Ryan, president of the American Society of Mechanical Engineers.

Allis-Chalmers promotions

ELECTIONS OF THREE vice presidents and a secretary by the board of directors of Allis-Chalmers Mfg. Co., was announced by R. S. Stevenson, president. Named vice presidents were P. F. Bauer, managing director, Allis-Chalmers International; E. J. Mercer, general manager, construction Machinery Division; and William M. Wallace, general manager, General Products Division.

A. D. Dennis, assistant secretary and assistant treasurer has been named secretary, succeeding W. E. Hawkinson who has retired.

Arc welding award winners

TOM LEARMONT, product engineer for Bucyrus-Erie Co., received the $5,000 First Award in a national competition sponsored by the James F. Lincoln Arc Welding Foundation of Cleveland for the design of machines improved through the use of arc welding. Mr. Learmont's winning design was for the welded steel base of a 55-cu. yd. power shovel weighing 452,000 lb. A total of 26 awards were made to engineers in companies manufacturing machinery and tools for various processing type industries.

Thomas Robins dies

THOMAS ROBINS, 89, founder and former chairman of Hewitt-Robins, Inc., and inventor of the heavy-duty belt conveyor, died November 4 after an illness of several months.

Mr. Robins conceived the idea for the modern belt conveyor in 1891 and made his first sales to Thomas Edison's iron ore mine in northern New Jersey. In addition, he invented a new type of belt roller, now called an idler.

He founded the Robins Conveying Belt Co. in 1896. In 1945, the company was merged with the Hewitt Rubber Co.

Buys Climax Engine Co.

THE WAUKESHA MOTOR CO. has announced its purchase of the complete plant and assets of the Climax Engine Mfg. Co. of Clinton, Iowa.

Sales appointments made by Kensington Steel

Wilbur E. Ellis

Joseph F. Milmine

THE APPOINTMENT of Wilbur E. Ellis as general sales manager has been announced by the Kensington Steel Division of Poor & Co. Mr. Ellis joined the company in 1926 in the engineering department. He became chief engineer a few years later, which position he held until his promotion to night plant superintendent.

Mr. Ellis joined the sales engineering force in 1948, and was named manager of the new eastern sales office in 1952. He will be succeeded as eastern sales manager by Joseph F. Milmine, formerly southeastern sales manager.

Appointed branch manager

ALFRED W. ESCOFFIER has been appointed manager of the Seattle branch of Thor Power Tool Co. He was formerly San Francisco service engineer.

(Continued on page 197)

A profit-maker on the job

A time-saver on the road

The Diamond 77

DIAMOND

PORTABLE *Rotor-Lift* CRUSHING PLANT

The Diamond 77 provides:

- **Powerful crushing capacity . . . 10″ x 36″ jaw crusher . . . 36″ x 22″ or 36″ x 24″ roll crusher.**
- **Fast separation on a 4′ x 12′ vibrating screen.**
- **Belt conveyors 30″ wide.**
- **Speedy, continuous movement of aggregate with the "line-flow" rotor lift principle.**

Diamond makes everything for the aggregate producer:

Jaw Crushers • Roll Crushers • Conveyors • Screens and Washers • Feeders and Bins • Portable and Stationary Crushing Plants for Rock and Gravel.

When you can turn out more than 300 tons of road gravel per hour in 25% to 35% crush, you're in a good profit position. And that's exactly what the Diamond 77 is doing at locations all over the country . . . outproducing every machine in its class. Ask any Diamond user. He'll tell you he gets high volume production at low cost consistently. And that's the key to profits.

Diamond engineering and Diamond design are responsible for this record production. For example, material flow is shorter . . . faster. The Diamond Rotor-Lift principle insures speedy, continuous movement of aggregate. Oversize roll crusher and jaw crusher provide top efficiency even when extremely hard rock is processed. Operation is smooth, dependable, with a minimum of downtime and maximum hourly production.

Complete portability is another important factor with the Diamond 77. Simple, powerful hydraulic mechanism provides for fast, easy lowering of the screen deck to travel position. It's ready for the road without costly delay. And just as easily readied for operation at the new location.

Get the facts now on the Diamond 77 or any other of the many Diamond products for the aggregate producer. Write today.

DIAMOND IRON WORKS

DIVISION

GOODMAN MANUFACTURING COMPANY

Halsted Street and 48th Place • Chicago 9, Illinois

Enter 1494 on Reader Card

MANUFACTURERS NEWS

(Continued from page 196)

Elected I-H president

THE ELECTION OF FRANK W. JENKS as president of International Harvester Co. has been announced by John L. McCaffrey, chairman of the board. Mr. Jenks succeeds Peter V. Moulder, who retired as president and who also resigned from the board of directors ending a 47 year association with the company. Mr. Jenks, formerly executive vice president, has been a member of the board since 1952.

Elected vice president

CONTINENTAL COPPER & STEEL Industries, Inc. has announced the appointment of Robert Campello as vice president. In this capacity, Mr. Campello will be general manager in charge of operations at the Wooldridge Mfg. Division plant, Sunnyvale, Calif.

Named field engineer

THE CONSTRUCTION MACHINERY Division of Clark Equipment Co. has announced the appointment of Charles L. Ellis as field engineer. In this capacity he will handle job estimating, the securing, classifying and organizing of technical data, and will direct field tests and regular field engineering activities in connection with new products. Also announced was the appointment of Ralph Hall as field service representative for the "Michigan" line in Pennsylvania, Ohio, Virginia, West Virginia and Kentucky.

Fairbanks, Morse promotions

SEVERAL PERSONNEL CHANGES have been announced by Robert H. Morse, Jr., president of Fairbanks, Morse & Co. Page S. Procter, formerly manager of the New Orleans branch, has retired. W. F. Wahlenmaier has been appointed to succeed Mr. Procter. Milo C. Roy succeeds Mr. Wahlenmaier as manager of the Portland branch. W. B. Morse has been promoted to manager of the Chicago branch. Edward E. Lynn has been named director of personnel, succeeding L. R. Gaiennie who recently resigned.

Opens division sales office

ST. REGIS PAPER CO. has announced the opening of a multiwall packaging division sales office in Oklahoma City, Okla. Bruce C. Kelly, previously manager of the Little Rock, Ark. office will head the new office.

Harnischfeger promotions

R. E. YOUNG has been appointed to the newly created position of special representative for the electric excavator division according to an announcement by the Harnischfeger Corp.

Several promotions of sales personnel in the Construction and Mining Division also were announced. F. J. Hirner has been appointed sales manager of electric excavators. Assisting Mr. Hirner will be G. T. Raubach. W. N. Ryan will succeed Mr. Hirner as district manager of the Chicago office. Other changes include, R. B. Maxson, promoted from excavator salesman to district manager at Buffalo, N.Y., and C. R. Morgan, Jr. appointed to the position of sales manager, soil stabilizers and Sierra loaders.

Assists vice president

FRANK POTTS, former manager of the Montreal branch of The White Motor Co. of Canada Ltd., has been appointed assistant to Karl A. Roesch, vice president of the company and general manager of the Autocar Division. Mr. Potts succeeds Robert G. Oakley who was recently appointed Cleveland, Ohio branch manager.

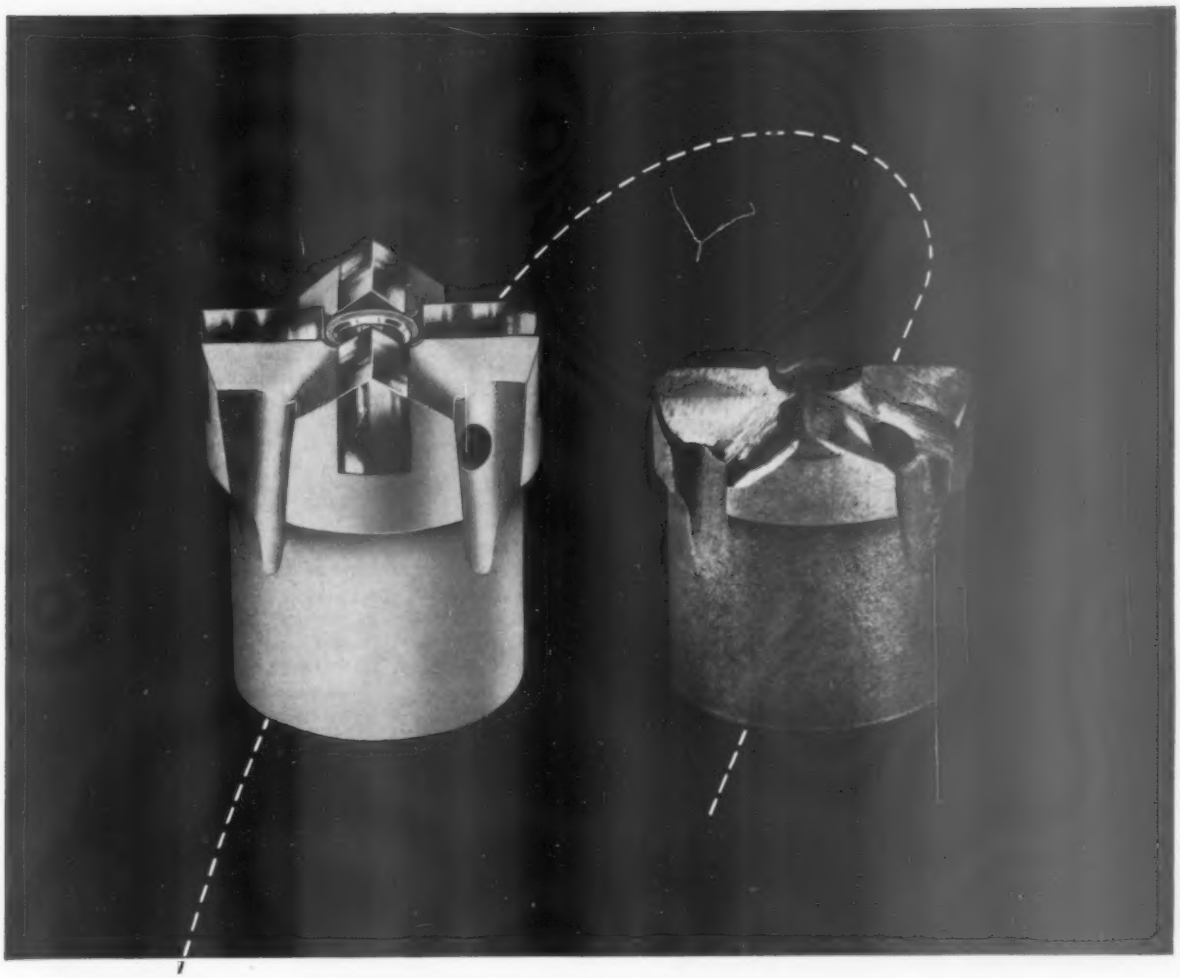
Bucyrus-Erie film

BUCYRUS-ERIE CO. announces the availability of a 16-mm. sound-color motion picture, "Hydro-Magic," demonstrating the performance features of its Model H-5 Hydrocrane.

Industrial sales manager

APPOINTMENT OF C. E. Flora as manager of industrial sales of the Davey Compressor Co. has been announced. Mr. Flora, a graduate of Northwestern University, will direct sales of Hydrovane rotary stationary and tank-mounted compressors.

(Continued on page 200)



THIS JOY BIT DRILLED *46% Farther*... STILL MORE TO GO

YOU'LL FIND YOUR BIT SIZE IN THIS CHART

SHOULDER DRIVE	BOTTOM DRIVE	TAPER SOCKET
1½"		1¼"
1⅝"		1⅜"
1¾"		1½"
1⅞"		1⅝"
2"		
2⅛"	2½"	
2¼"	2¾"	
2⅜"	3"	
2½"	3¼"	
2¾"	3½"	
3"	4"	
3½"	4½"	
4"	5"	
4½"	5½"	
	6"	

Note: Shaded areas are X-Type, others are Cross Type

WRITE FOR FREE BULLETIN 172-27

Drilling Rock with a scleroscope hardness of 90-100 takes a lot out of most carbide bits . . . on this job, other bits were averaging 532 feet. Our illustration shows a Joy bit before and after drilling almost 800 feet in this formation. The average for Joy bits on the entire job was 781 feet.

Here's why: OFFSET WINGS allow drag-free rotation, faster removal of cuttings, easy reconditioning . . . DEEP SLOTTED CHIP WAYS allow cuttings to escape; bit does not regrind its own cuttings . . . INSERT STAYS IN because of new brazing method . . . SPECIAL ALLOY STEEL BODIES heat treated for shock resistance and high fatigue life . . . PRECISION MILLED THREADS instead of tapped threads.

These are the reasons why Joy tungsten carbide bits give extra footage . . . and only Joy bits have all these features. Let your Joy representative prove it to you. ***Joy Manufacturing Company, Oliver Building, Pittsburgh 22, Pa.*** In Canada: *Joy Manufacturing Company (Canada) Limited, Galt, Ontario.*

WSW C 6925-172

JOY ... EQUIPMENT FOR MINING ... QUARRYING ... CONSTRUCTION

Portable Air Compressors

Wagon Drills

Drilling Bits

Hand-Held Rock Drills

Enter 1496 on Reader Card

MANUFACTURERS NEWS

(Continued from page 198)

Ellicott buys dredge firm

THE FLOATING DREDGE BUSINESS of the American Steel Dredge Division, American Hoist & Derrick Co., Fort Wayne, Ind., has been acquired by the Ellicott Machine Corp., Baltimore, according to an announcement by C. Ellis Ellicott, Jr., chairman of the board. Under the agreement, all manufacturing rights, patents, drawings, engineering data, patterns for the design, manufacture and sale of dredges and dredging equipment of American Steel Dredge Division become the property of Ellicott.

Russell Hawk retires

THE RETIREMENT OF Russel Hawk, advertising manager of Fuller Co. has been announced. Mr. Hawk was first associated with Fuller when he joined the old Fuller-Lehigh Co. of Fullerton, Pa., in the 1920s. Upon the closing of the Fullerton plant in 1931, he was employed in the advertising department of The Babcock and Wilcox Co. until 1935. At that time he joined the present Fuller Co. as advertising manager.

Assistant chief engineer

THE SMITH ENGINEERING WORKS has announced the appointment of William S. Shira as assistant chief engineer. Since graduating from Penn State University as a civil engineer and an engineer of mines in 1940, Mr. Shira has been with the Allis-Chalmers Mfg. Co. In his new position, Mr. Shira will be in charge of the Engineering Department under A. L. Munro as director of engineering.

New sales manager

WESTERN PRECIPITATION CORP. announces that D. B. Perlis has been named product sales manager in charge of co-ordinating Dualaire sales. Also announced, was the appointment of Edward R. Lawlor as product sales manager for the firm's Multiclone dust collectors.

New sales appointees

MARVIN G. MAUDLIN has been named advertising and sales promotion manager of Sherman Products, Inc. Mr. Maudlin replaces Warren E. Henderson who was promoted to sales operations manager. Appointment of three regional managers also was announced. George E. Harpham will be in charge of the eastern region, John Bergsma, the central region, and James Fisk will manage the western region.

Moves service headquarters

LAMSON MOBILIFT CORP. has moved its service department headquarters from Chicago to the factory location in Portland, Ore., to provide closer coordination with the production and sales functions. The department is headed by Floyd M. Mayse, formerly district manager for the west central region and supervisor of the Chicago branch operation.

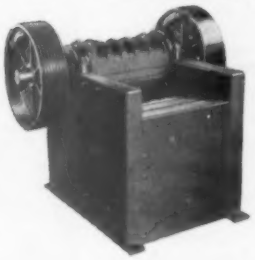
(Continued on page 202)

For men who like to underbid their competitors

(and make a nice profit, too!)

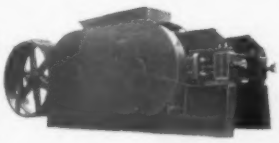
JAW CRUSHERS

PIONEER overhead eccentric action offers double action crushing stroke, thus providing forced feed and greater capacity. Shaft bearings placed closer than on any other crusher. Double-walled, welded steel base reduces weight at the same time it increases strength. Reversible jaw plates. Crusher can be adjusted while in operation. Available in 12 sizes from 1016 to 4248.



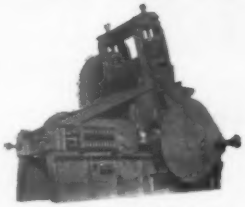
TWIN ROLL CRUSHER

PIONEER design makes 100% of roll shell available as crushing surface. Shells are easily replaced without removing bearings from shaft. Driven by star gears, completely enclosed and running in oil. Available in 2416, 3018, 3024, 4022, and 5424 sizes.



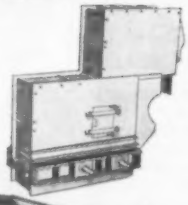
TRIPLE ROLL CRUSHER

Add a third roll and you have a triple roll crusher. This makes it possible to increase stage of reduction to as much as 6½". The Triple Roll Crusher is manufactured only by PIONEER. Available in 3018, 4022, 5424 sizes.



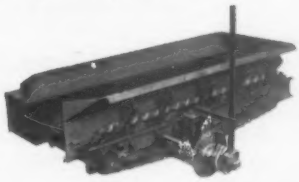
IMPACT BREAKER

The PIONEER 3648 Cuber is a multi-stage, regulated-flow impact breaker suitable for either primary or secondary crushing of relatively non-abrasive stone. Full gradation control. Capacity up to 150 tph of minus 1"; up to 350 tph of minus 3".



APRON FEEDERS

Heavy-duty PIONEER Apron Feeders have ¼" thick, overlapping, forged steel pans carried on heavy chains supported on wide heavy duty rollers. Available with or without straight or flared sideboards. Widths 30", 36", 42", 48". Lengths 6', 8', 10', 12', 14' and larger.



PORTABLE APRON FEEDERS

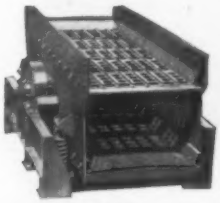
Mounted on pneumatic-tired chassis. Used in place of conveyor for feeding heavy, sharp, abrasive rock to portable primary crushing plant. Easily detached for quick job-to-job moves. Available in two sizes: 36" x 30' and 42" x 30'.

PIONEER ORO FEEDERS

The most rugged feeder made. Pans, rollers, drive sprockets and idlers cast from special high alloyed manganese steel. Pans are from 9/16" to 1" thick, depending on width of feeder. Chain links are cast as part of pan so there are no bolts or rivets to break or loosen. Available in 30", 36", 42", 48", 60", 72", 84" widths.

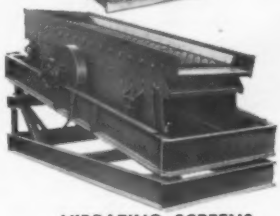
MECHANICAL FEEDERS

PIONEER Reciprocating Plate Feeders provide uniform flow of material to conveyors. Available in five different models.



MESABI SCREEN

This heavy-duty vibrating screen withstands heaviest loads. Frame is 18" car channel on I-beams reinforced with 8" wide flange beams. Pans are ¾" or ½" thick. Four bearing, heavy duty shaft. Seven sizes from 4' x 10' to 6' x 14'.



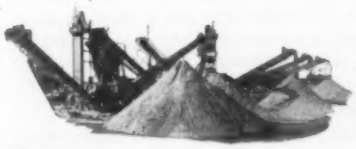
VIBRATING SCREENS

PIONEER's full-circle throw gives same positive down-hill vibration at each end as in middle, thus every square inch works for you. Balanced end-for-end and top-for-bottom, to effectively confine vibration to pan. 2 and 3 deck screens in 11 sizes.

BUZZER SCREEN

This small, compact vibrating screen fits on PIONEER Portable Conveyor and is also available with bin mounting. 3' x 6' size for production of ¾" material up to 50 tph; 4' x 8' size for production of ¾" material up to 90 tph.

PIONEER ENGINEERING also manufactures a complete line of portable Crushing, Screening, Washing, and Bituminous Mixing Plants. For further information, mail coupon or see your nearest PIONEER Distributor.



CONVEYORS

Available in 18", 24", 30", 36", and 42" widths. Easy-to-erect *pre-engineered conveyors* range in length from 30' to 120' in 5' increments. *Job-engineered conveyors* for horizontal, extra long, or other special installations are available in any length from 12' up.

PORTABLE CONVEYORS

On hydraulic cradle truck for easy portability and one-man operation. A 70' conveyor is easily raised to operating position in 9 minutes, lowered in 1 minute. Available in 18", 24", 30", 36" widths; in 40', 50', 60', 70' lengths.

Pioneer®
EQUIPMENT

Pioneer Engineering, 3200 Como Avenue S.E., Minneapolis 14, Minnesota
Division of Poor & Company, Inc. • Chicago
Please send information on equipment checked below.

☐ GRAVEL & ROCK PLANTS	☐ JAW CRUSHERS	☐ ORO FEEDERS
☐ WASHING PLANTS	☐ ROLL CRUSHERS	☐ MECHANICAL FEEDERS
☐ BITUMINOUS PLANTS	☐ IMPACT BREAKERS	☐ VIBRATING SCREENS
☐ BITUMINOUS PAVERS	☐ APRON FEEDERS	☐ CONVEYORS

Name _____

Company _____

Address _____

City _____ *Zone* ____ *State* _____

Enter 1525 on Reader Card

MANUFACTURERS NEWS

(Continued from page 200)

On special assignment

PAUL I. BIRCHARD, vice president of Westinghouse Air Brake Co., has been appointed to the president's staff on special assignment. Working with other officers, Birchard will assist in the coordination and integration of the various divisions and subsidiaries of the company. Mr. Birchard joined the company as vice president and general manager of its Le Roi Division in 1954.

Frank J. Zielsdorf, staff assistant, has been appointed general manager of the Le Roi Division, filling the vacancy caused by Mr. Birchard's new assignment.

Named product manager

THE APPOINTMENT of G. Herbert Metzger as manager of project engineering has been announced by B. F. Goodrich Chemical Co. Mr. Metzger, a graduate of Case Institute of Technology, Cleveland, joined the company in 1942, as a technical supervisor in design, construction, and operation of synthetic rubber facilities.

Appointed sales manager

THE APPOINTMENT OF Len Wichman as eastern regional manager for sales and service of its line of construction and road building equipment has been announced by Pettibone Mulliken Corp. Prior to this appointment, Mr. Wichman was a New York area district representative.

Named construction manager

EUGENE F. DAILY has been named western construction manager for the Atlas Powder Co.'s explosives sales department. Mr. Daily, a graduate of the University of North Dakota, has been with the company since 1936.

James M. Ellis, assistant manager of the San Francisco explosives sales district, has been appointed to succeed Mr. Daily as district manager.

Promoted to sales post

EDWIN T. GOREE has been promoted to assistant general sales manager according to an announcement by Bucyrus-Erie Co. Mr. Goree joined the company in 1947. After serving in the export sales department, he was named field representative for Mexico in 1951. In 1955, he was appointed assistant sales manager of excavator distributors.

Assistant sales managers

APPOINTMENT OF TWO assistant sales managers has been announced by Robert F. Moody, sales manager of the newly created industrial truck division of Hyster Co. Walter A. St. Clair, formerly assistant sales manager of the eastern division, will work directly with all domestic dealers in the nationwide wholesale organization. James N. Rector, former southeastern district manager, will handle the administrative duties connected with the new division's sales activities.

(Continued on page 204)

1957 has been a year of contrasts.

Significant advances in technology, the completion of a substantial portion of our program to expand our productive capacity in the U. S. and Canada and the strengthening of our marketing organization are all tangible achievements which will bring us both immediate and long-term benefits. On the other hand, a generally lower activity in new projects coming in has emphasized the narrowing profit margins faced by most businesses and points up our insistence on improving designs, reducing costs and increasing efficiencies.

Abroad, the picture is bright. Our subsidiaries report current high levels of business and there is great optimism for the future. Of particular interest is the success of our newest family member, Dorr-Oliver Pty. Ltd. of Australia, which opened its doors on January 1 of this year and by mid-year had far surpassed expectations. Growth of Dorr-Oliver (India) Ltd., another of our newer associates, has also been noteworthy, with the recent addition of local manufacturing facilities justifying still greater optimism.

SUGAR — In 1957 a total of 42 RapiDorr Clarifiers and 48 Oliver-Campbell Cane Mud Filters were sold to the cane sugar industry. A significant aspect of this outstanding record has been the increasing participation of our subsidiaries and representatives abroad. They are locally manufacturing, in some instances for the first time, 31 of these machines in Argentina, Brazil, England, France, Germany, India, the Philippines and South Africa.

POLYETHYLENE — The first Merco Pressure Centrifuges went into operation early last year removing catalyst from liquid polyethylene at capacities considerably in excess of original expectations. Overseas, British, Italian and German producers ordered Pressure Centrifuges for similar application in both new commercial scale and pilot plants.

SANITATION — One of the highlights of the year was D-O activity in the waste water disposal field. Four major new developments — all ideally suited for smaller plants — were introduced. The SpiroVortex System which is a complete treatment process akin to activated sludge, the Degritting Clarifier and Clarigester and the DorrClone Classifier as applied to sewage degritting have already been commercially proven at plants in the western U. S. First installations of the CompleTreator, a package plant to serve a population of 150, are now operating with some 30 additional units scheduled to start up in 1958.

Our subsidiary in the Netherlands has marketed equipment for facilities as far distant as Norway, Iraq and India, while new or enlarged D-O equipped domestic installations sold in 1957 can be found from New York City to Los Angeles and San Antonio, Texas to Fairmont, Minnesota.

GENERAL METALLURGICAL — Applications of the DSM Screen, first introduced in 1956, continued to grow in virtually every field we serve. One of the most promising has been magnetite recovery in heavy media cyclone plants on the Mesabi Range. Also new is the swing-type agitator for the American Filter — a development particularly applicable to filtration of heavy metallurgical slurries.

Following the trend noted in previous years, widespread acceptance of the Slurry Mixer by the cement industry and the Thickener — American Filter combination by the coal industry continued again last year. In Germany, France, India and Australia flue dust clarification and recovery contributed materially to our business and in Canada a substantial volume of Dorr-Oliver-Long shaft equipment and mine cars was purchased for underground mines.

PLANT ENGINEERING—At the year's end, design of a granular fertilizer plant for India and sections of a new Cuban nickel recovery plant were partially completed, and construction of three D-O designed phosphoric acid or fertilizer plants was progressing in Venezuela, England and Montana. During the year a 200,000 ton per year triple superphosphate plant in Florida and a Norwegian phosphoric acid installation were put into operation and brought up to design capacity in near record time.

FLUOSOLIDS SYSTEMS — Also in the fertilizer industry two western producers ordered the first FluoSolids Systems to be used for calcination of phosphate rock. Designed to handle a total of 1,500 tons per day, these installations were the direct result of successful field tests using a portable fluidized bed pilot plant. During the year other FluoSolids Systems were ordered to dry limestone and blast furnace slag in the U. S., roast copper matte in Belgium, calcine clay in Scotland, decompose copperas in England, and roast pyrite for a Japanese paper mill and an Italian sulfuric acid manufacturer.

The largest FluoSolids System for fine coal drying, handling over 600 tons per hour, went into operation during the third quarter at a new eastern preparation plant, and construction is nearing completion on a second similar, but smaller, installation. In the realm of unusual applications is a unit drying a highly-corrosive chlorinated hydrate at an eastern chemical plant.

WATER TREATMENT — In the southwestern United States the DorrClone Classifier has been used with notable success for the desanding of municipal well water supplies. For small plants the PeriFilter System with a single pre-treatment unit and split filter provides economical unitized water treatment.

Major expansions of the Louisville, Kentucky and Fort Worth, Texas treatment facilities will be D-O equipped as will new municipal plants at Springfield, Ohio; Peoria, Illinois; and Delhi, India. New industrial treatment installations will serve pulp mills in South Carolina, India and Venezuela and an Indian fertilizer plant.

PETROLEUM — Another modification of the familiar DorrClone Classifier is the Clay-Jector, latest development for control of drill mud weights. Noteworthy economies are possible using this unit which mechanically rejects undesirable drilled solids while recovering valuable barites for reuse.

CHEMICAL — A substantial amount of D-O equipment of all types has been incorporated into the unique flowsheet of a new astrakanite recovery plant in the Chilean nitrate fields. In Germany and the United States, Horizontal Filters have been widely applied to dewatering and washing of fine organics as well as highly corrosive inorganics, and around the world filters of both standard and special construction were ordered for an almost endless variety of services.

COPPER AND URANIUM—Last year substantial amounts of D-O processing equipment were purchased for new and enlarged copper mills in South America, Mexico, the Belgian Congo and United States and new uranium mills in Australia, United States and Canada. A new and improved design and method of fabrication of stainless steel rake Classifier blades was developed. Although conceived initially for the uranium industry this design is broadly applicable to classifications involving corrosive solutions. Certainly no summary of 1957 accomplishments would be complete without mention of the Chemical Engineering Achievement Award presented last month to a group of companies including Dorr-Oliver for their contribution to extractive metallurgy of atomic age metals. Interestingly enough, D-O was one of the very few engineering equipment organizations selected for the award.

With several years of expansion and enormous activity behind us, the current business plateau provides a much needed opportunity to consolidate and catch our breath. The real challenge will be to increase the spread between income and outgo through more efficient operation — while accelerating the rate of our technological advances. I am confident we can, and will, do both.

J. D. Hitch, Jr.
President

November 18, 1957

MANUFACTURERS NEWS

(Continued from page 202)

Executive vice president

THE ELECTION OF Charles A. Woodley as an executive vice president of Caterpillar Tractor Co. has been announced by Harmon S. Eberhard, president. Mr. Woodley joined the company in 1926, advancing through various factory jobs to his first supervisory position in 1934. He was named general factory manager at Peoria in 1950 and was promoted to Peoria plant manager in 1953. He was elected a vice president in 1954. In his new capacity, Mr. Woodley will continue to give administrative direction to the manufacturing division.

Recent sales promotions

SEVERAL DISTRICT SALES personnel changes have been announced by Reo Division, The White Motor Co. Edward W. Flamme was named manager of the newly opened Portland, Ore. district sales office. Larry Dolbee was made Washington, D.C. manager. He will serve as a special Washington representative, assisting government buying agencies with specifications and applications for Reo truck purchases. William A. Long was appointed manager of the Pittsburgh office, replacing M. F. Sperry, who is retiring because of health.

Opens district office

PEABODY ENGINEERING CORP. has announced the opening of a new district office for the Philadelphia area located in Drexel Hill, Pa. This office will be under the management of Henry J. Schmidt, formerly of Mackenzie Engineering Co.

END

Program Preview

41st ANNUAL CONVENTION NATIONAL CRUSHED STONE ASSOCIATION

Monday

"Effective Public Relations for Aggregate Producers"
"The Price of the Best Is Always All the Rest"
Presentation of NCSA Safety Contest Awards
Greeting Luncheon—"Laughter vs. Slaughter"
Afternoon—Inspection of Manufacturers Division Exposition
Monday Night Frolic—dancing, dining, entertainment

Tuesday

Operating session—informative talks on operating problems
concurrently with
Round table on taxation, depletion, employee relations
"This Problem of Skid Resistance"
"Telephone Techniques" clinic
Evening open for individual plans

Wednesday

Morning—Inspection of Manufacturers Division Exposition
General Luncheon—"Soviet Union and Eastern Europe"
"Aggregates for Federal-Aid Roads"
"Legislative Outlook"
"Threatened Road Blocks in the Highway Program"
Evening Dinner Dance—entertainment

For the Ladies

Entertainment and special functions for the ever increasing number of ladies attending the convention

Conrad Hilton, Chicago, Ill. • February 17, 18, 19, 1958

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Feb.	Aug. . . . .
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CHECK MONTHS AD TO APPEAR

SEPARATOR—Dings Magnetic with 3 cross belts. Complete with rectifiers and electromagnets. 220 volt.

PUG MILL—Chambers 30" x 14'7" with Drive.

PAN CONVEYORS—24" x 18'—30" x 33'—36" x 54'

ELECTRIC MOTOR—200 HP, 875 RPM, GE Slip Ring, Serial 4405764, 440/3/60 $1500.00.

G. & W. H. CORSON, INC.
Plymouth Meeting, Pa.

JAW CRUSHERS
60"x48" to 6"x3"
New and used RELIABLE

"Farrel-Bacon" Jaw Crushers

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FOR SALE

170-B Bucyrus Erie 6½ yd. Elec. Shovel.
120-B Bucyrus Erie 4 yd. Elec. Shovel.
88-B Bucyrus Erie 4 yd. Standard Shovel.
1055 P&H Standard 3½ yd. Standard Shovel.
80-D Northwest 2½ yd. Standard Shovel.
51-B Bucyrus Erie 2 yd. Standard Shovel.
44-B Bucyrus Erie 2 yd. Standard Shovel.
38-B Bucyrus Erie Comb. Shovel-Crane.
3500 Manitowoc Shovel, Drag, Crane.
25 Northwest ¾ yd. Shovel.
Unit 1020 ¾ yd. Shovel.
1055 P&H Drag, 100', 3½ yd.
111-M Marion Drag, 100', 4 yd.
54-B Bucyrus Erie Drag, 80', 2½ yd.
K-595 Link Belt Drag, 85', 3 yd.
95 Northwest Drag, 70', 2½ yd.
903 Osgood Drag, 70', 2 yd.
Also, various smaller Shovels and Drags, Truck Cranes—P&H, Bay City, Link Belt.
400 Reich Truck Mounted Rotary Air Drill.
600 Reich Heavy Truck Mounted Rotary Air Drill.
Pioneer Continuous Portable Rubber-tired Mixing Plant—used one year.
Euclid Trucks—rear and bottom dump.

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313 Hazleton Nat'l. Bank Bldg.
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KILNS—COOLERS—DRYERS

7'5" x 24' Link-Belt Roto Louvre
5'2" x 16' Link-Belt Roto Louvre
8'6" x 50' Allis Chalmers
8' x 150' x ¾" Vulcan
6' x 50' x 7/16" Allis Chalmers
5' x 40' x ⅜" Bros. Mfg.
5' x 20' x ¼" welded
4' x 30' class XH2 Ruggles Coles

PULVERIZERS—MILLS—CRUSHERS

Williams Comet Roller Mill
Jeffrey 24" x 30", 30" x 30" 2-roll Crushers
Raymond 4-roll High Side
Raymond 5-roll Low Side
3620 Dixie Non Clog Hammermill
Jeffrey Hammermills, 36" x 36"—20" x 12" & 15" x 8"

OTHER ITEMS

Joy Loaders Type 8 BU
78" x 36' Akins Duplex Spiral Classifier
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12" Merrick Weightometer
Rotoclone Collector type W Size 36
#0 Simpson Intensive Mixer

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(Machinery & Equipment Merchants)

JUST PURCHASED

1-F. L. Smidth 8' 8" x 176' Unax Rotary Kiln, modern, all welded, new 1943, priced attractively for quick sale

KILNS—COOLERS—DRYERS

2—Vulcan 6' x 50' Rotary Kilns
1—Allis Chalmers 6' x 50' Rotary Dryer
1—Rennenburg 5'6" x 50' Rotary Dryer
1—Bartlett & Snow 7' x 30' Rotary Dryer
1—Bartlett & Snow 6' x 30' Rotary Dryer
1—Hetherington 5' x 30' Rotary Dryer
1—Ruggles Cole 5' x 30' Rotary Dryer
3—Louisville 6' x 50' Rotary Steam Tube Dryer
3—Link Belt 11'6" x 36', 6'4" x 24', 5'2" x 20' Roto-Louvre Dryers.

• •

PULVERIZERS—MILLS—CRUSHERS

1—Allis Chalmers 7' x 24' two compartment Compeb Mill 450 HP motor.
1—Patterson 8' x 18' Silex-lined Tube Mill.
1—Abbe 6' x 15' Silex-lined Tube Mill 75 HP motor.
1—Dixie No. 3620 Non-Clog Hammer Mill.
1—Allis Chalmers 48" x 60" Jaw Crusher
1—Buchanan 36" x 48" Jaw Crusher
1—Allis Chalmers 24" x 12" Jaw Crusher
3—Allis Chalmers 24" x 54" Anaconda Roll Crusher
1—Allis Chalmers 16" x 42" Anaconda Roll Crusher
2—No. 60 William Hammer Mills.

• •

SEPARATORS—SCREENS CONVEYORS—BINS

1—Raymond 16' dia. Single Whizzer Air Separator 50 HP motor
1—Tyler Hummer 3' x 5' Vibrating Screen.
5—Link Belt, Allis Chalmers 3' x 8' Screens.
9—Belt Bucket Elevators 30' to 60' centers, 8" x 5", 11" x 6" buckets.
950 ft. 9", 10", 12", 14" Screw Conveyor with drives.
6—30" Troughing Belt Conveyor 50 to 123 ft.
5—Steel Bins 22'8" x 20'6" x 4'10", 20' x 20' x 30', 12'6" dia. x 47', 11'6" dia. x 28'.

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QUARRY EQUIPMENT

Cedarapids 2540 jaw only. Being Rebuilt.
Cedarapids 1836 twin jaw crusher. Good.
Cedarapids 936 jaw crusher. As is.
Cedarapids 3042 double impeller. Rebuilt.
Cedarapids 1024 single pass plant on rubber.
Cedarapids 4033 hammermill. Being rebuilt.
Telsmith 24" cone crusher. Good.
12" x 35' inclined open elevator. New.
Cedarapids 4' x 14' triple deck screen.
Cedarapids 4' x 14 double deck screen. Rebuilt.
New Holland 4' x 12' double deck screen. Rebuilt.
Pioneer 4' x 8' double deck screen. Rebuilt.
Smithco 24" x 87' lattice frame conveyor.
Smithco 24" x 60' portable belt conveyor.
27½ ton, single-compartment 8' x 12' bin.
60-ton, two-compartment, 8' x 18' storage bin with clam gates.
100-ton, two compartment, 13' x 23' bin.
Special bins to your specifications.
Conveyors—18"—24"—30"—36". Also conveyor belting.

SHOVELS AND CRANES

Lorain 820 2-yd. diesel shovel-crane.
Lorain 82 2-yd. diesel shovel.
Lorain 79-J 1½ yd. diesel dragline.
Lorain 79 1¼ yd. diesel shovel.
P&H 655B 1½ yd. diesel dragline.
Bucyrus-Erie 38B, 1½-yard diesel dragline. Rebuilt.
Lorain L-50K 1 yd. diesel shovel.
Lorain L-50J 1-yd. Diesel clam-crane.
Link Belt LS-85 ¾-yard diesel shovel-drag.
Lima 34 Paymaster ⅜-yard diesel shovel. Good.
Unit 1020 ¾-yard diesel powered shovel-crane.
Lorain TL-20 ¾-yd. diesel backhoe.
Lorain L-26 ¾-yard diesel powered clamshell.
Lorain L-40 ¾-yard diesel clam-drag shovel.
Lorain TL25S ¾-yd. gas clam-crane.
Unit 614, ½-yard diesel backhoe.
Insley K-12 ½-yd. gas dragline. As is.
Lorain MC-504-W crane clam. Reconditioned.
Lorain MC-414 20-ton Moto-Crane.
Browning T-15-C 17½ ton truck crane.
Link Belt HC-90 25-ton truck crane.

TRACTORS, TRUCKS, SCRAPERS, ETC.

1—Euclid 15½-yd. six wheel scraper.
1—Euclid 7-yard overhung engine scraper.
1—Mack LR8 15-ton rear dump.
5—Euclid 10-ton rear dumps. Excellent.
3—Euclid tractors with 3200 gallon water tank semitrailer.
1—Euclid 3200 gallon water tank semitrailer.
1—Pullman S-600. 6 to 8 yard scraper.
1—Caterpillar DW-10 scraper.
1—Caterpillar DW-10 with Athey side dump.
1—Allis Chalmers HD-10 tractor with hydraulic bulldozer blade.
1—International 300 tractor, with loader, backhoe.
1—International TD-14A tractor with PCU.
1—International TD18 with Bucyrus-Erie bulldozer blade. Excellent condition.
1—Caterpillar D-4 with Eimco front loader.
1—Caterpillar D-7 with cable bulldozer blade.
1—Caterpillar D-8 with cable bulldozer blade.
1—Austin Western diesel powered grader.
1—Adams diesel powered grader.

SHOVEL ATTACHMENTS

Lorain 820, 2-yd., 23' boom, 21' stick.
Lorain 50, 1-yd., 21' boom, 17' stick.
Lorain 40, ¾-yd., 19' boom, 16' stick.
Lorain 30A, ½-yd., 16' boom, 13'4" stick.
Osgood 903, 2-yd., 24' boom, 20'6" stick.

BACKHOE ATTACHMENTS

Lorain 40A, 18' boom, 7' stick, 28", 36" or 44" bucket.
Koehring 304, 19'10" boom, 8'6" stick, 38" bucket.

DIESEL POWER UNITS

Cat. D7700, 74 H.P. at 1000 RPM. Rebuilt.
Cat. D13000, 145 H.P. at 1000 RPM. Rebuilt.
GMC Twin Diesel, rebuilt.
GMC 3021C, 3-cylinder, new.

ASPHALT PLANT

Barber-Greene 848 Model with drier, gradation unit, etc.

AIR COMPRESSORS

105 cu. ft. Ingersoll-Rand gas portable.
125 cu. ft. Jaeger gas portable.
500 cu. ft. Ingersoll-Rand, Waukesha power.
600 cu. ft. Gardner-Denver diesel portable.
420 cu. ft. Gardner-Denver two-stage stationary. Rebuilt.

L. B. SMITH, INC.

Camp Hill, Pa.

Phone Harrisburg REgent 7-3431

CRUSHERS: 1016, 1026, 1426, 1836, 2036, 2436, 2540, 3042, 4042, 4248 JAW, 10", 15", 18", 36", 50" McCully, 2'4" & 4' Traylor TY. 20B, 28", 36", 48" Telsmith, 37½, 38½ Kennedy, 636 AC GYR. 5424 & 3018 DBL ROLL 2, 3, 4' CONES.
CRUSHING PLANTS: CR2036, 2236, 2436, 2540, Pitmaster, Jr. Super, Commander, Lippmann 1836, 2436 & 36" Gyr. Univ. 880. AW81. Pioneer 4. Diamond 65. Many others.
DRYERS: 3½ x 30, 4 x 38, 5 x 21, 6 x 50, 7 x 30, 8 x 70.
Noble 150, 250 & 500 ton **BATCH PLANTS**
CONVEYORS: 20 x 60, 24 x 90, 19 x 145, 36 x 151, 42 x 160.
MILLS: 3 x 8, 8 x 8, 6½ x 6 Ball. 3½ x 7 Rod. 28P Mikro, Kent #7, 3033, 4033, 5366 CR, 3642 Jeffrey Hammer.
WASHERS: 36 x 25, 27 x 15. **DREDGES:** 6", 8", 10".
SHOVELS & DRAG: NW25, 95, Marion 362, 372, Manitowoc 3000B, 4500, Bucyrus 22B, 29B, 54B, 44B, 120B, Koehring 304, 702, Lima 1201, Lorain 820, Link Belt 60, 75, 85, 300, 595. P&H 255A, 855, 1055.
Repres: Bonded Scale & Machine Co.
MID-CONTINENT EQUIPMENT CO., INC.
8321 Gannon, St. Louis 24, Mo., Wydown 1-2826

SHOVELS, CRANES & HOES

Sargent "410" NEW ⅜ yd. Trench Hoe, mounted on new Crane Carrier. Big Discount!
Bantam "M-49" ⅜ yd. Trench Hoe, mounted Reo 6x6.
Insley "K-12" ½ yd. Dragline or Trench Hoe, Reconditioned.
Marion "331" ¾ yd. Used Shovel or Dragline.
Byers "83" ¾ yd. Used Dragline, 40' Boom.

TRACTORS & LOADERS

Caterpillar "D-4" Diesel Tractor w/Traxcavator Hydraulic Front End Loader, Rebuilt engine & tracks.
Allis-Chalmers "TLW" Used Tractor w/Tractomotive Front End Loader, ¾ yard.
International "TD9" Diesel Tractor w/Bucyrus-Erie Dozer-Loader.
Barber-Greene "545W" Used Rubber-Tired Bucket Loader.
Pettibone "10" Used 1-Yd. Gas Tractor-Shovel, 3 years old.

MISCELLANEOUS

Jaeger 3 Yd. (4¼ yd. Agitator) Hi-Discharge Mixer. Repaired, Sandblasted, & painted. Unmounted.
Universal 916 R. B. Jaw Crusher $750.00
Austin-Western "99" 4-Wheel Drive Diesel Motor Patrol, 13' Blade, Scarifier.
Leland 20-Ton Lowboy Drop Deck Tandem Axle Semi Trailer.
Pettibone-Wood "820A" NEW Windrow Proportioner. Reduced for quick sale.
Pettibone-Wood "P620" Used Preparizer. G-M Diesel power. Will rent or sell.

NOTE: All this equipment located in our yard.

120 S. Pierpont **Phone 4-6706**

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ROCKFORD, ILLINOIS

4' x 10' Tyrock F600 Screen
I.R. Tugger Hoists (Air)
Syntron F33 Feeder
Syntron V200 Vibrators
Syntron V125 Vibrators
Rotary Feeders, 1 to 3 Cu. Ft.
Vari-Speed Drives 1 to 3 H.P.
105 Ton Blaw Knox with 2 Yard Batcher.
590' x 30" 6 ply Belt, 90% New
Elev. Chain C102B-111-102½
Jacketed Screw Conveyor 12"
8" x 27' Enclosed Elevator
8" x 29' Enclosed Elevator
8" x 31' Enclosed Elevator
8" x 38' Enclosed Elevator
10" x 38' Enclosed Elevator
4" x 33' Enclosed Elevator
14" x 39' Enclosed Elevator
6" x 24' Perf. Disch. Encl. Elev.
16" x 30' Perf. Disch. Encl. Elev.
4' x 40' Dryer, Spare Parts
Two 10' Dia. x 28' High Tanks
Stiffleg Derrick 15 Ton—110' Boom
Worthington Wagon Drill WP251
Two Type 38 4 x 10' Hummers
Seco Screen 4' x 14' triple deck
Seco Screen 4' x 8' double deck
Deister 3 Deck 5' x 10' Screen
Farrel 36" x 10" Blake Crusher
Farrel 24" x 13" Blake Crusher
Williams Hammermills 50 to 100 H.P.
Cedar Rapids 9" x 12" Jaw Crusher
Climax 10" x 20" Jaw Crusher
Acme 9" x 16" Jaw Crusher
Jeffrey 24" x 18" Pulverizer
Sturtevant #1 Rotary Crusher
Kennedy #19 Secondary Crusher
Diamond Portable Crusher Plant, 15 x 24, Pneumatics.
Cedar Rapids 25 Yd. Secondary Portable Crushing Plant.

G. A. UNVERZAGT & SONS INC.

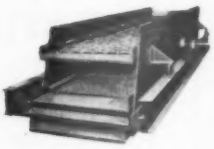
136 Colt Street, Irvington, N.J.

BONDED EQUIPMENT BARGAINS

NEW CURRENT MODELS IMMEDIATE SHIPMENT FROM OUR FACTORY
WRITE, WIRE OR PHONE FOR FREE CATALOG AND PRICES

NEW BONDED® HEAVY DUTY VIBRATING SCREENS

BUY WITH CONFIDENCE, OUR REFERENCES ARE: Ohio National Bank, Columbus, Ohio; Dun & Bradstreet



Model Number	No. of Decks	Screening Area	Sale Price
124A	1	2'x4'	$ 443.00
224A	2	2'x4'	472.00
126A	1	2'x6'	472.00
226A	2	2'x6'	501.00
136A	1	3'x6'	581.00
236A	2	3'x6'	688.00
336A	3	3'x6'	956.00
138A	1	3'x8'	675.00
238A	2	3'x8'	815.00
338A	3	3'x8'	996.00
336B	3	3'x6'	1620.00
436B	4	3'x6'	1685.00
138B	1	3'x8'	1510.00
238B	2	3'x8'	1620.00
338B	3	3'x8'	1735.00
248B	2	4'x8'	2310.00
348B	3	4'x8'	2440.00
2410B	2	4'x10'	2400.00
3410B	3	4'x10'	2550.00
2412B	2	4'x12'	2590.00
3412B	3	4'x12'	2970.00
4412B	4	4'x12'	3165.00

HEAVY DUTY MODELS, TYPE B: Four bearing positive throw eccentric shaft; 3' x 6' to 5' x 14', 1 to 5 decks. Write for New 8-page Bulletin No. 1087.

NEW BONDED® GENERAL DUTY VIBRATING SCREENS

GENERAL DUTY SCREENS, TYPE A: Eccentric weight mechanism, spring mounted, 1 to 8 decks, 2' x 4' to 3' x 8'. Write for New 8-page Bulletin No. 1086.

For mineral, chemical and other industrial products. Fast, efficient and economical for cleaning, sizing, grading, dewatering. Made in all metals, including stainless steel. Enclosed models for hot materials or dust control. Bonded screens are built for any screening operation, wet or dry.

NEW BONDED® TROUGHING IDLER CONVEYOR BARGAINS

Complete Pre-Fab sections quickly and easily jointed together on the job. We take our loss on our stock of short length belting. You can save as much as 50% on BONDED CONVEYOR SPECIALS, with conveyor belting in two pieces. Conveyors are equipped with 5" roll diam. idlers and return rolls, 20" diam. head pulley and 16" diam. tail pulley mounted on 2 1/16" or 2 7/16" diam. shaft. Belt is new 4-ply, 28-oz. duck, 1/8" top rubber cover x 1/32" bottom cover and is fresh stock made by leading manufacturers.

Remember, You Save Up To 50%

CONVEYOR PRICES INCLUDE BELTING

Belt Width	Length of Conveyor	List Price	Sale Price
14"	25'	$1397	$ 722
14"	50'	2222	1144
14"	85'	3377	1733
16"	20'	1262	636
16"	45'	2137	1088
16"	60'	2662	1359
16"	90'	3712	1900
18"	25'	1477	794
18"	45'	2217	1166
18"	70'	3142	1648
18"	85'	3697	1933
18"	100'	4252	2220
18"	130'	5362	2797
20"	25'	1517	828
20"	60'	2882	1533
20"	75'	3467	1838
20"	90'	4052	2145
24"	25'	1590	898
24"	45'	2430	1330
24"	70'	3480	1875
24"	100'	4740	2514
24"	120'	5580	2950
24"	150'	6840	3603
30"	50'	2911	1617
30"	70'	3871	2119
30"	90'	4831	2614
36"	25'	1818	1118
36"	45'	2858	1678
36"	60'	3638	2096
36"	100'	5718	3214

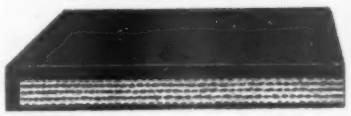
For conveyors longer or shorter than those listed above, add or deduct the following per foot prices according to belt width. Prices include belting. Write For Bull. #1138.

For 14" belt	$16.84 per foot
For 16" belt	18.04 per foot
For 18" belt	19.24 per foot
For 20" belt	20.37 per foot
For 24" belt	21.78 per foot
For 30" belt	24.75 per foot
For 36" belt	27.95 per foot

Bonded troughing idler conveyors are also available with truss type construction. Write for Bulletin #1189 and prices.

NEW CONVEYOR BELTING SAVE UP TO 30%

AND WE PAY THE FREIGHT ON 200 POUNDS OR OVER



Major Brand: 12# to 15# Average Friction Pull. 800# to 1000# Average Cover Tensile.

Heavy Duty 4-ply, 28-oz. duck, 1/8" top rubber cover x 1/32" bottom rubber cover belting having high tensile strength, tough cotton duck, strong carcass and proper flexibility. For heavy boxes, bags and bulk materials. Troughs easily. Famous brands at deep cut prices. Fresh stocks.

Width	Ply	List Price Per Ft.	Sale Price Per Ft.
14"	4	$3.63	$2.83
16"	4	4.08	2.97
18"	4	4.51	3.29
20"	4	4.97	3.89
24"	4	5.85	4.56
30"	4	7.18	5.21
36"	4	8.51	6.11

Major Bee Brand: 16# to 19# Average Friction Pull. 2500# to 3000# Average Cover Tensile.

A high grade of heavy duty 4 and 5-ply, 28 oz. duck, 1/8" top rubber cover x 1/32" bottom rubber cover. These belts are for more severe service, high tonnages and abrasion resistance. For handling stone, mineral ores, concrete, cement, coal, and other similar materials, both wet and dry. Belts have molded rubber edges.

Width	Ply	List Price Per Ft.	Sale Price Per Ft.
14"	4	$4.31	$3.06
16"	4	4.85	3.46
18"	4	5.39	3.82
20"	4	5.90	4.37
24"	4	6.94	4.94
30"	4	8.53	6.07
36"	4	10.09	7.35
24"	5	8.14	5.78

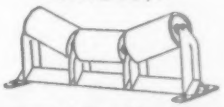
Major Bee-X Brand: 20# to 24# Average Friction Pull. 3500# to 4000# Average Cover Tensile.

A heavier duty 28-oz. duck belt with 1/4" top rubber cover x 1-32" bottom rubber cover. For the higher abrasion resistance applications and handling of materials where more strength is required to give greater belt life.

Width	Ply	List Price Per Ft.	Sale Price Per Ft.
16"	4	$5.48	$3.78
18"	4	6.10	4.20
20"	4	6.68	4.79
24"	4	7.87	5.41
30"	4	9.70	6.65
24"	5	9.11	6.31

Other widths, plies, duck weights and cover thickness available at low prices. Write for Free Sample.

NEW IDLERS AND RETURN ROLLS SAVE 30%



3-roll, 5" diameter Troughing Idlers for:			
14" belt	$18.50	24" belt	$21.25
16" belt	19.25	30" belt	22.00
18" belt	20.50	36" belt	23.75
20" belt	20.75	48" belt	25.50
1-roll, 5" diameter Return Idlers for:			
14" belt	$7.25	24" belt	$ 8.50
16" belt	7.50	30" belt	9.50
18" belt	8.00	36" belt	10.00
20" belt	8.25	48" belt	11.50

All steel. Interchangeable with other well-known makes. Furnished with easily replaceable prelubricated Sealed ball bearings. Also can be furnished with greasable type Alemite Fitted bearings at slight additional cost. Maintenance is negligible. Bonded Rubber Disc Impact Idlers priced from $61.00. Write For Bulletin #1138.

NEW BONDED® FEEDERS

For high tonnage and controlled feed of Aggregate, Sand, Gravel, Crushed Stone, Clay products, Metallic Ores, Coal, Cinders and almost any other bulk material to Crushers, Screens, Conveyors, Mills and other process machinery. Feeder may also be driven from tail shaft of Bonded Troughing Idler Conveyors, thus eliminating the necessity of two motors. All models available in abrasion resistant alloy steel plate. Capacities to 440 tons per hour. Write for Bull. #1211.

Priced from $275.00

NEW BONDED BUCKET ELEVATORS

Open or Enclosed, Vertical or Inclined Bucket Elevators with Continuous or Spaced Buckets mounted on Chain or Belting. Bonded's 19 standard models mean lower prices and you get a Custom Built Elevator at no extra cost. There is a style of bucket for virtually every material or condition: wet or dry, lumpy or fine, granular, slivery, or pellet shapes, hot or chemically active. Because of the wide variety of sizes and types, prices will be quoted on request. Bonded has a complete line of Continuous Steel, Salem Steel and Malleable Iron Elevator Buckets for prompt shipment at Low Prices. Write for Bulletin #1203. A complete line of Parts and Accessories available to build your own Bucket Elevator and Conveyor. Write for Bulletin #1138.

BONDED SCALE AND MACHINE COMPANY

PHONE Days: Hickory 4-2186 — **WRITE FOR FREE CATALOG AND PRICES** — **PHONE Evenings: AX. 1-2213, HU 6-3156**

128 Bellevue — **Mfrs. of Scales, Conveyors, Conveyor Parts, Idlers, Vibrating Screens, Crushers and Feeders** — **COLUMBUS 7, OHIO**

SPECIAL ITEMS

Lorain Moto-Crane 254, 25-tons 60' bm.
Sauerman 2 yd Cableway 800' 150 HP elec. motor 5 Euclid 4 F.F.D. End Dump 15 yd Cummins Diesel
Belt conveyors 24", 30", 36" individual units
Complete 5 Gramm 78 bbl cement bulkers w. Onan engines and compressors w/air outlets into tanks.
B428 tandem Mack batchers; handle 4 batches ea.
Euclid Model 10HV loader, Diesel, 54" belt 38'6"
Sierra Model C30 loader, Cat. D318 Diesel. Belt

STEAM GENERATORS for CONCRETE PLANTS

Littleford On-Off KWIK Package type
Cleaver-Brooks 50 HP Package type 100 PSI
Cleaver-Brooks LFM-S 80 HP 100 PSI Pack. type.
Cyclotherm MC 90 Pack. type 100 PSI

CONCRETE MIXERS

Ransome Model 84S, 3 yd. tilting type
Smith 422, 4 yd. tilting type
Koehring 56S 2 yd. tilting type
Koehring 28S 1 yd. stationary type

TRUCK MIXERS

30 Jaeger, REX, Smith 3 to 6½ cu. yd. high discharge, horizontal, truck mounted.

CRUSHERS—KILNS—DRYERS

JAW: Acme 10x20, 15x36, 14x26, 14x28, 10x42, 16x32, 18x32, 25x40, Eagle 10x16, 20x36, Diamond 24x36", Cedar Rapids 10x20, 15x36, 20x36, 25x40, Farrell 10x20, 18x30, 11x36, 18x36, 30x48, Buchanan Type C 30x42, 36x42, Traylor 18x36, 24x36, Allis-Chalmers 30x18, Good Roads 10x30, Telsmith 18x32, Pioneer 30x42, Universal 18x24.
GYRATORY: Al-Chal 322, 6', 7½', S, 9, 9K, 10, 16, 20, 36, 42, Telesmith 8S, 28" Intercone.; Kennedy Van Saun 7, 19, 25½, 38; Traylor TY 1'8", 4' Type TS, TY 3', T2 3', TZ3'.
ROLL: Cedar Rapids 40x20, Pioneer 40x22, Pioneer 30x18, Telsmith 24x16, Universal 40x24, 18x30.
HAMMERMILL: Jeffrey Type B3 24x20, Type B 36x24, 36x36, 36x42, Eagle 24x24, Stedman 24x30, Cedar-Rapids 50-50, 30x33, Penn Model SXR 100
BALL MILL: Hardinge conical 5'x26", 8'x18",Gates 5'x22", Marcy 77, Int. X-18 5'x6'.
TUBE MILLS: 6'6" x 21' Smidth, 5' x 16' A-C.
ROD MILL: 3' x 8' Denver, 3' x 6' Marcy, 4' x 10' J&C (Never used)
AUTOCLAVES: 2 Jackson & Church 6' x 50', bolter head, 3 8'8" x 120' Besser
CONE: Symons 2', 3', 4' and 4½' coarse bowl.
KILNS: 4'x42', 5'x30', 6'x50'6", 6'4"x45', 6'x72' Vulcan 9x100, 10'6"x105', 8'x124', 6'x90', 6'x72'.
DRYERS: 6'x60', 6'x72', 5'x24', 4'6"x32', 3'6"x20', 6'x30'
COMPEB MILLS: A-C 7'x24' with motor drive.

CRUSHING PLANTS

C-R Port. Prim 2036, complete rebuilt. Cat. Diesel.
Pioneer Mdl 150 Diesel, Port. 2036 jaw.
C-R 2540 Prim. Port. Diesel
C-R 2236 jaw crusher 30x33 hammermill Material washer, etc.
Cedar-Rapids AA-2225 primary port. Diesel.
Cedar-Rapids 3033 hammermill Diesel. Trailer mtd.
Eagle washing plant, classifier sand screws, screen.
C-R "Pitmaster" 10 x 16 jaw, 16 x 6 roll
Diamond 65 port. gravel 10 x 20 jaw, 30 x 13.
C-R Primary Port. 22 x 36 Jaw, Diesel.
C-R WASH-ALL Screening-washing. Complete.
Eagle 36x25" single screwspiral flights washer classifier dehydrator
Universal 20x36 jaw, 20"x18" roll, plant complete.

CONCRETE PLANTS AND EQUIPMENT

Johnson one-stop Mdl TY-270, 4 compts 1032 bbls cement silo.
C. S. Johnson 150 ton 3 compt. 1245 bbl cement silo
Erie Strayer port. 1 yd. mixer. Complete.
Noble CA 506, 500 ton 6 compt. aggr. bin silo 2000
Blaw-Knox 100 ton 3 compartment aggr. 3 beam scales weighbatcher.
Butler 150 ton 3 compt. aggr. bin w/weighbatcher.
Johnson 120 ton 4 aggr. compt. cement compt. 85 bbls US Engrs. Corps spec.
B-K P31G new 1956, 3 comprt. 100 tons aggr. 400 bbls HI LO cement, 4 yd Smith Mixers.
Pre-Mix 150 ton 4 compt. 3 aggr. 1 cement; ground cement silo 2 yd concrete mixer. New 1955. Comp ete.
Johnson 105 ton 3 compartment aggregate
Cement bin 250 bbls overhead storage with 375 bbls cement recirculator ground storage silo
Fuller Kinyon Type C 6" cement unloader.
Johnson 105T, 3 compt. aggr., batcher, comp., new '54.
Rex 160, 190, 200 Pumpcretes.
Noble 150 ton 4 compt. 2yd tilt-mixer Complete

HYDRAULIC SUCTION DREDGES

Morris 10"x8" Diesel. Pontoon mounted.
10" Portable Diesel powered. Complete.
12" Diesel powered, pontoon mounted. Complete.
Ellicott 8" with cutter. Diesel Hull 48'x18'x3'6".
20' Ellicott Diesel 155'x49'x8'.
8"Hydraulic Diesel, On 32'x8' steel pontoons.
Amsco 10" Diesel power portable. Excellent.
6" portable Diesel complete with cutters, etc.
8" H&B twin Diesel drive. Complete.

SCREENS

Tyler F-360 4'x12' 2 deck w/spray bars.
Trommel 6'x45' 75 H.P. elec. motor.
Kennedy Van Saun 3'x10' 3 deck.
Tyler-Niagara 3 deck 7½ H.P. A.C. motor.
New Holland 4'x12' 4 deck.
Telsmith 5'x12' dbl. deck elec. motor.

RICHARD P. WALSH CO.
30 Church St. New York 7, N.Y.
CO 7-0723 Cable: RICHWALSH

FOR SALE

1—3 deck 3x8 Simplicity Screen spray bars chute electric power speed reducer plant in good condition $2,000.00

1—20" Eagle sand washer-new gears & new water bearings $1,500.00

1—24" Eagle sand washer-new last spring with electric power $2,500.00

1—2 x 5'6" Simplicity feeder model OA. 10-JA-2 complete with electric power and load starter feeder used very little $900.00

1—2 x 3 model C double deck Simplicity screen new $550.00

1—20" Twin screw Link Belt log washer-new water bearing 40 horse power electric motor & drive $5,500.00

1—10 x 36 Universal Jaw Crusher with 60 horsepower Allis Chalmers gas-motor $4,500.00

1—2 yds Sauerman gravel bucket new teeth $1,000.00

1—1½ yds Sauerman gravel bucket new teeth $700.00

1—Northwest 105 Dragline 60' boom 100 horsepower G. E. electric motor machine has been used to drag 2 yd. Sauerman bucket to feed washing plant $2,500.00

1—Steven Adams sand piler new last spring electric power $800.00

1—Carver 6" Water pump 50 horsepower electric motor & starter $900.00

1—½ yd. clam bucket $400.00

1—80' x 20" Universal Channel conveyor electric power new belt $1,600.00

1—40', 18" channel conveyor electric power $800.00

1—40' 20" channel conveyor electric power $800.00

1—40' 18" channel conveyor electric power $800.00

1—80' 18" channel conveyor electric power $1,500.00

1—60' 18" channel conveyor electric power $1,200.00

1—2000 lbs. dial cement batching scales with complete bin attachment $1,000.00

1—R 160 International with 3½ Yd. Challenge mixer good condition $3,000.00

1—50 yd 3 compartment all welded steel bin $1,000.00

ANDERSON READY-MIX CO.
903 AVENUE D
ROCK FALLS, ILLINOIS

Save on Your INDUSTRIAL TRACK

FOSTER QUALITY — FULLY GUARANTEED

RELAYING RAILS

Handle more cars better—cost less to install and maintain. Foster stocks all Rail Sections 12# thru 175#, Switch Material and Track Accessories.

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3—3078 CFM Inger. Rand 500 H.P. New 1947
3—676 CFM Inger. Rand 125 H.P. New 1956
DIESEL ELEC. LOCOMOTIVES
4—65 ton Whitcomb 1—25 Ton & 1—70 Ton G.E. 20 Ton Davenport Gas Locomotive.
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5'6" x 60', 6' x 50', 80" x 60' & 8' x 125'
REDUCTION MILLS
6'6" x 14'6" Marcy Rod Mill
4' x 8' Hardinge Rod Mill
3—No. 77 Marcy Ball Mill
8' x 60" Hardinge Ball Mill
4 ft. Telsmith Cone Crusher
25B Telsmith Primary Breaker
30" x 42" Universal Jaw Crusher
18" Superior McCully Secondary
VIBRATING SCREENS
2—4 x 8 Seco 2 Deck. 1—4 x 14, 3 Deck.
4 ELEC. WHIRLEY CRANES
2 Amer. R25-75 Ganty 165' Boom
2 Amer. R20-60 Ganty 139' Boom

R. C. STANHOPE, INC.
60 E. 42nd St., N.Y. 17, N.Y.

1—#4 Champion Jaw Crusher 9" x 15"
2—#4½ Champion Jaw Crusher 10" x 20"
1—Allis-Chalmers Jaw Crusher, Blake Type 10" x 20"
1—Reliance Jaw Crusher 15" x 30"
1—36" x 20' Revolving Screen
1—36" x 11' Revolving Screen with Scrubber
1—30" x 14' Revolving Screen
1—3' x 5' Link-Belt Foundry Shakeout Screen
1—10" x 20" New Holland Hammer Mill NEW All-Steel & Manganese J. & H. Hammer Mills 5½" x 18"
2—NEW B-G 15" x 36' Bucket Elevators on chain with 10 H.P. new gear head motors
1—18" x 25' Portable Belt Conveyor

JOHNSON & HOEHLER, INC.
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10 TON SAUERMAN CABLEWAY—900 Ft. span, fixed steel head tower 125 Ft. high, movable tail tower 60 Ft. high Diesel Power, New 1952, Discontinued 1954.
1—AMERICAN 25 TON DIESEL LOCOMOTIVE CRANE—50 Ft. Boom, New 1949.

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All sizes, new and rebuilt. Starters, accessories, pulleys and repair parts. Gear motors, Falk Shaft mounted Speed Reducers, couplings and V-belt drives.

Expert Repair Service

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Lancaster 6' dia. Vert. Mixer 25 HP.
Kent Model #2 Continuous Mixer.
Raymond #00 & #0000 Pulverizers
Kilns, Dryers, Filters, Hammer Mills, Crushers.
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For Quick Results

Complete Sand & Gravel Set-Up

Pioneer-Eagle all electric washing plant, complete with plate feeder with conveyor, delivery conveyors, 4'x12', 3½ deck screen, 3'x6' single deck screen; fine material screw washer; 5", 1000 GPM high pressure pump with 75 HP motor. Comes complete with all piping, fittings, valves and structural supports. Designed to produce 2 types of sand and 3 sizes of course aggregate plus oversize. Used less than 30 days—Like new.

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Caterpillar 955 Traxcavator with 1½ C.Y. bucket. Used only 226 hrs.—Like new.

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Caterpillar D4 wide-gauge tractor with hyd. 4S dozer and 16" track shoes. Used only 271 hours—Like new.

Today's replacement cost of entire outfit—$70,480.00

OUR SPECIAL SALE PRICE—$48,425.00

ALSO AVAILABLE, with the above, Like new Quick-Way Model 80 Truck Crane mounted on offset cab 6x6 carrier. Used 30 days. Replacement cost—$15,043.00

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BARGAIN

170-B BUCYRUS-ERIE

ELECTRIC

LOADING SHOVEL

with

6½ Yard Rock Dipper. Excellent mechanical and electrical condition.

Eastern Pennsylvania location.

FRANK SWABB
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SPECIALS

1—New 6½' x 150' Kiln

DRYERS
6' x 60'

CRUSHERS
1—24" x 36", 18" x 36", 15" x 30", 12" x 24" Jaw Crushers.
2—42" x 16" Allis-Chalmers Crushing Rolls, rebuilt. 36" x 16 rebuilt Sturtevant rolls.
2—24" x 14" Rogers Iron Works Crushing Rolls, Rebuilt.
1—24" x 12" Farrell Bacon Crushing Rolls.
1—6", 10", 16", 20" McCully Superior Gyratory Crushers.
No. 3 up to No. 12 Gyratory Crushers.

BALL & TUBE MILLS
2—5½' x 20', 5' x 22' & 6' x 22' & 7' x 24' Tube Mills.

MISCELLANEOUS
1—8' x 10' Rotary Filter.

We make new dryers and kilns.

Have you any machinery that you want to sell?

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FOR SALE: Brand new sand and gravel plant located only 35 miles from the largest market in Texas. Plant will produce 1,000 cubic yards per nine hour working day. There is a ready sale for all the material the plant can produce. If interested, don't delay as this is a real bargain and will be sold quick. Write or call

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Crushing and Milling Equipment Located in New Jersey

Gyratory Crusher:
Allis Chalmers 8-K, spare parts, extra shaft.

Smooth Roll Crushers . . .
1—Traylor, 54" x 24", type "AA" (2 motors)
2—Superiors, 16" x 36" (2 motors)
2—Traylors 16" x 30" type A

Mills . . . .
Marcy Rod Mill, 3' x 6' with spare parts
Traylor Ball Mill 7' x 6' with 250 HP motor (several tons of balls available)

Trough Belt Conveyors . . .
All have 20" Rex Roller Bearing Idlers
1—14" x 166' has 35 troughing Idlers
1—14" x 36' has 7 troughing Idlers
4—18" x 20' has 3 troughing Idlers
1—18" x 40' has 11 troughing Idlers
1—20" x 29' has 5 troughing Idlers
1—20" x 36' has 7 troughing Idlers
1—36" x 21' has 6 troughing Idlers

Loading Bins . . . .
6 bins, 16' diameter x 14½' heighth. Cone tops and flat bottoms. Mounted on 10" H-beams with 15' clearance under bins.

Cone Tank . . . .
1—16' diameter with 60° slope.

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7—Selectro 4' x 10' Single deck
5—Tyler Hummer 4' x 10' Single deck
8—Tyrock 4' x 10' Single deck.

Track Scale . . . .
1—Fairbanks Single Beam track scale 300,000# capacity

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75—Dodge Timkin Roller Bearing 1 7/16" bore
80—Dodge Timkin Roller Bearing 1 15/16" bore

Dust Collector . . . .
Schnauble Multi-Wash Collector type H-B-6P

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Chicago Pneumatic 17" x 10" x 12" rated 788 CFM at 125#

Hoists . . . .
1—Vulcan Mine Hoist, 42" x 60" drum
1—Exeter double drum hoist, 23" x 24" drums

Positive Pressure Blowers . . . .
1—Wilbraham Green, Size 19.55 x 24
2—Roots Connersville, Size 3

Motors . . . .
Over two hundred motors, Slip ring, gear head, etc. Many sizes and speeds.

Available for inspection at plant site in New Jersey

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FOR SALE

We Own And Offer:

Bucyrus-Erie 120 B Dragline, 100 ft. Boom, 35 ft. Gantry, 4 ft. Tracks. Full Ward-Leonard controls. 900 ft. cable, 3 ea. 200 KVA Transformers 12000/2300 V. 4½ cu. yd. Esco Bucket. $9000.00 New Spares. Completely Rebuilt 1956 with only 4 months service thereafter. Located Northern California. AA1 condition.

21 each ½ cu. yd. unused Dragline buckets, all with Teeth, Dump Blocks all Chains. All Standard Manufacturers, Page, Esco, etc. Like new at $700.00 each.

5 each ½ cu. yd. Erie Clamshell buckets, unused and complete. Like new at $1100.00 each.

MARRIOTT EQUIPMENT CO.
204 Davis St., San Francisco, Cal.
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Dealer Inquiries Invited

LOCOMOTIVES: 4—Electro Motive Service diesel electric, freight type, 1500 H.P., 120 tons, of the operating type, and two non-operating or booster type, same as above. One 98 ton diesel electric Switcher, 900 H.P. Two Electro Motive Service 600 H.P. Switchers. Two 50 ton diesel electric with Cummins diesel motors and G.E. electrics. One 35 ton and one 25 ton diesel electric. One 20 ton diesel. One 16 ton gasoline.

ROTARY KILNS & DRYERS: 4½ ft. x 40 ft., 5 ft. x 50 ft. and 8 ft. x 40 ft. Rotary Kilns, all modern, gas fired, complete with all equipment including instruments and controls. One 9 ft. x 120 ft. Two 8 ft. x 125 ft. Two 6'6" x 100 or 120 ft. Two Ruggles Coles Dryers class XA18, 104" dia. by 65 ft., new condition.

ROOF TRUSSES: A frame type-26 pieces 110 ft. and 16 pieces 100 ft., clear span.

MINE HOISTS: One 7' x 7' single drum, 400 H.P., 1⅝" rope. One 10' dia., 7' face, single drum with center dividing flange, 400 H.P., 1¼" rope. One 5' dia., 5' face, single drum, with center dividing flange, 100 H.P., 1" rope. One 84" dia., 54" face, double drum, 1⅝" rope, 400 H.P. One 10' dia., 10' face, double clutched drums, 1250 H.P., 1⅝" rope. All the above hoists have post brakes, Lilly control, 2200 volts and all are complete.

CLAM SHELL BUCKET: Williams 1¾ yd. capacity, excellent condition.

JAW CRUSHER: 10 x 15, 10 x 20, 12 x 24, 15 x 36, 24 x 36, 25 x 40, 30 x 42 and 40 x 42. One 18 x 30" sectionalized for underground use.

COMPRESSORS: One Ingersoll Rand PRE-2, 780 H.P., 4500 CFM, 2200 volts. One Ingersoll Rand PRE-2, 500 H.P., 2500 CFM, 2200 volts. One Chicago Pneumatic OCE, 300 H.P., 1500 CFM, 2200 volts. One Joy WN-14 Radial model F, 300 H.P., 2300 volts, 1825 CFM. One Ingersoll Rand XRE, 11 x 12 and 19 x 12, 175 H.P. synchro motor, 300 RPM, with 5 step clearance control.

Above machines are complete with all necessary auxiliary equipment.

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CEMENT PLANT 1,200,000 Bbl. yearly capacity with 4—Vertical Kilns.
JEFFREY 54" x 30" Hammer Mill 100 HP.
BUCYRUS Revolving SHOVELS, Models 50-B, 320-B.
ROTARY DRYERS & KILNS: 9 x 30, 6' x 50', 4'6" x 40', 4'6" x 32', 4' x 30, 3' x 15', 3' x 24'.
ROTARY COOLERS: 104" x 30' x 104" x 70', Submerged Type.
HARDINGE CONICAL MILL, 10' dia. x 96", with Silica block liners.
PATTERSON BALL TUBE MILL, 5' x 22', 200 HP, UNUSED.
AL. CH. 7' x 24' COMPEB MILL, 450 HP, two-compartment.
AL. CH. 6' x 16' BALL TUBE MILL, 30 HP.
SIMPSON #3F Intensive Mixer, 65 cu. ft.
WORTHINGTON Air Compressor, 450 CFM-75 HP.
ROBBINS Vibrating Screen, 3' x 10'.
Link Belt BUCKET ELEVATOR, 58' high, 16" x 12" x 17" Buckets.

WE WILL PAY CASH FOR GOOD USED EQUIPMENT

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DEPENDABLE USED MACHINES

Special: International Harvester Tractor Model TD-9 w/hyd. dozer attach.

Universal 3½ x 8' dd screen	Lorain 41 crawler crane	Hopto 360, upper works
Pioneer 30 x 15' conveyor	Hydrocrane Model H-3	Terratrac Model 400
30 x 38 portable conveyor	Koehring 303 dragline	Trackson shovel
Telsmith 5 x 14 dd screen	Unit 614 ½ yd. hoe	Agricat bulldozer
Pioneer 30 x 200' conveyor	Unit 1020 ¾ yd. hoe	Hopto 120 on IH truck

This equipment rebuilt in our modern plant by expert mechanics. Come see it!

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MICHIGAN 175A Tractor Shovels, 2½ cy, new 1956, excellent. $14,000 Yard. Rental Purchase.
LIMA 1201 Shovel 3 cy., #327322, new 1951, with Cummins diesel, rebuilt front, excellent condition. Bargain. $23,500 Rental Purchase. Minn.
BUCYRUS ERIE 22B Electric Mine Shovel, 1 cy., new 1953, rebuilt, excellent. $13,000 Yard. Rental Purchase.
CEDARAPIDS Super Rock-It Portable Plant with 22 x 25 rb. Jaw, feeder, 3018 rb. Roll, 4 x 10 2-deck screen, rotovator, diesel power, 2-delivery conveyors, tandem rubber, new 1953, excellent $25,000 Rental Purchase.
UNIVERSAL 2930 Portable Plant w/20 x 36 rb. Jaw, 3 x 8 apron feeder, 30 x 20 hammermill, 4 x 10 3-deck screen, rotovator, 2-delivery conveyors, Cat. diesel power units, tandem rubber. Good. $23,500 Rental Purchase.
UNIVERSAL 32 x 40 rb. Jaw Crusher Portable Primary w/10' feeder, under-crusher conveyor, Cat. Diesel power unit, tandem rubber. Good. $27,500 Rental Purchase.
PIONEER 150PR Portable Primary w/2036 rb. Jaw, feeder, conveyor, Cat. diesel tandem rubber, good. $14,000 Rental Purchase.
LIPPMANN 24 x 36 rb. Jaw Portable Primary with feeder, conveyor, Cat. diesel, tandem rubber. $14,000 Utah. Rental Purchase.
DIAMOND 93 Portable Plant w/2436 rb. Jaw, feeder, vibr. grizzly, conveyor, Cat. diesel, tandem rubber. Diamond Portable Secondary w/4020 rb. Rolls, 4 x 12 screen, rotovator, Cat. diesel power, tandem rubber. Reconditioned. $27,500 Texas. Rental Purchase.
CEDARAPIDS Jr. Tandem Portable w/1036 rb. Jaw, feeder, 2416 rolls, 3 x 10 screen, 2 delivery conveyors, diesel power, rotovator, tandem rubber, rebuilt like new. $24,500 Rental Purchase.
ROGERS 9 x 18 rb. Jaw Crusher on steel wheels with 30' bucket elevator, used little. $1250 Yard.
CEDARAPIDS 15 x 24 rb. Jaw Crusher, excellent. $2850 Yard.
TELSMITH 13 x 24 rb. Jaw Crusher, good. $1500 Yard.
GOOD ROADS 10 x 20 rb. Jaw Crusher, good. $950 Yard.
PIONEER 9 x 36 pb. Jaw Crusher, excellent. $850 Yard.
AUSTIN WESTERN 4 x 40 rb. Jaw Crusher, good. $1350 Yard.
ROGERS 30 x 30 Hammermill, excellent. $1150 Yard.
GILSON #28 Hammermill, 30 x 28 excellent. $950 Yard.
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SECO 4 x 10 2-deck Screen, good. $1000 Yard.
(2) **ALLIS CHALMERS** 5 x 16 Lo-Head Horizontal Screens w/motors, used little, excel'ent. $1500 Yard.
BUCKET ELEVATORS, 25' & 30' with 18" malleable buckets, steel frame, excellent. $400 each. Yard.
(2) **DAVEY** 210 cfm Super Chief Portable diesel air compressors, late model, pneu. tires, rebuilt. Excellent. $2250 each. Rental Purchase. Yard.
WAGON DRILLS, Cleveland D14 on rubber. $600. Gardner Denver D99DT w/8' & 14' masts, air motors on rubber. $950. Ingersoll Rand FM2 on rubber. $900. Chicago Pneumatic mdl. 70 w/air motor on rubber. $900 All rebuilt. Yard.
(2) **P&H** 255A Shovel Fronts, new, bargain. $1250 each. Yard. P&H 655 Shovel Buckets, 1½ cy., complete, new, cost $3000 Sell $1000 Yard.

WENZEL MACHY. CO.
565 S. 10th—Kansas City, Kans.—Mayfair 1-1710

LIMA 1201 SHOVELS

New 1951. 3 yd. buckets. Light plants. One had new diesel and tracks this summer. fob cars Midwest . . . $17,500 & $33,000
N. W. 95 DRAGLINE, new 1952, rebuilt . . . $35,000
Manitowoc 3000-B DRAGLINE . . . $45,000
5¾ ft. SHORTHEAD & 4 ft. Std. SYMONS.
12-K Gates Allis Chalmers GYRATORY.
4 ft. TRAYLOR TY gyratory, 10" feed.
54 x 24 PIONEER DOUBLE ROLL crusher.
4 x 10 MARCY ROD MILL, with 75 hp motor.
44 ton G. E. diesel-electric LOCOMOTIVE.
Construction, Mining & Power Equipment

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Box 97, Phone 500, Crosby, Minnesota.

FOR SALE or RENT

65 ton Whitcomb diesel elec. loco.
44 ton Whitcomb diesel elec. loco.
25 ton Davenport gas-elec. loco.
50 ton American guy derrick 115' mast 100' boom
90 HP Lidgerwood 2d diesel hoist w/ swinger
150 HP Amer. #140 3d gas hoist & swinger
1½ yd. Lima 602 crane. 110' boom
General Motors diesel engine
110 HP Clayton port. steam generator
5 yd. Bucyrus 120B electric dragline

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Available throughout the U.S.—Items you need may be available near you. Your inquires would be appreciated.

Buildings	Draglines	Loaders	Pavers
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Buckets	Drills	Motors	Scales
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Cableways	Engines	Mills	Shacklines
Cars	Excavators	Machine-tools	Shovels
Compressors	Feeders	Pulverizers	Tanks
Conveyors	Graders	Pipe	Tractors
Crushers	Generators	Pumps	Trailers
Dryers	Hoists		Etc., Etc.
	Kilns		

(I can sell your surplus equipment)

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Two C & D Movall Model RD-1520, 16 C.Y., cable operated, forced ejection rock wagon with sheave rock guards and cable savers. Complete for use with Caterpillar DW15 Tractors. Used only on one short job—in excellent condition.

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1 Rebuilt H-236 Lith-I-Bar Block Machine, one year old, 2 Block Type, complete with 3 H.P. "Dinabrake" Motors, completely automatic, including 4" 6" 8" 10" 12" and special molds.

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New "Equity" 45' diesel tug
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2—8'0" x 150'0" Vulcan, ¾" and 2" Plate, All Welded
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1—7'6" & 11'0" x 200'0" Vulcan ¾" and 2" Plate, All Welded

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1 Screen, 3' x 10' single deck Allis-Chalmers, low head suspended type, 1 Bucket, 1¼ yard capacity for Lull shovel loader, 1 Bridge crane, Euclid Crane and Hoist Company, Cleveland 20 ton capacity, 25' span, manually operated hoist and travel, Serial No. 9535 and 1 Wheelbarrow, power (Kwik-Mix Moto Bug), Model S-10.

For further information contact J. H. CLEMENTS, BASIC INCORPORATED, Maple Grove, Ohio; Post Office, Fostoria, Ohio.

FOR SALE

1—Patterson 7x18'—Two Compartment Ball Mill—practically new—spare liners, spare gears—400 HP motor and reducer
1—Atlas 5' Dia—22'6 long Ball Mill—stone lining
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SUPERINTENDENT of MAINTENANCE

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BOX P-81, ROCK PRODUCTS, 79 W. MONROE ST., Chicago 3, Ill.

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Experience required in BLASTING, DRILLING and operation of STONE MILL. Must have experience in direct supervision of personnel.

ASPHALT PLANT operation experience is desirable but not required.

Contact:

Old Colony Crushed Stone Co.

Vernon St., Quincy, Mass. P. O. Box 230
President 3-06-4
Attention: Mr. Stewart

POSITION WANTED—Have had 23 years experience in the stone industry serving as superintendent and general superintendent. Experienced in all phases of production, in both open quarrying and underground mining operations, and in labor relations and all phases of production. Desire position as general superintendent or manager with producer of aggregates, portland cement, lime or related operations which can utilize my many years of operating experience. Seek position that offers opportunity commensurate with performance. May also consider position with machinery supplier for these industries. Age 41, married, three children. Available immediately. P-85, Rock Products 79 W. Monroe St., Chicago 3, Ill.

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